

MARCH-APRIL 1961

# AUDUBON

MAGAZINE

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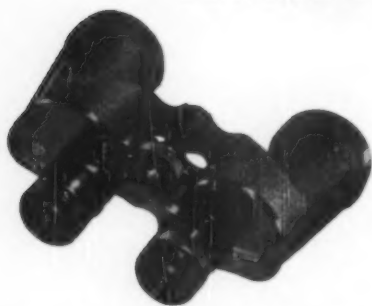
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DURYEA MORTON, Director of the Audubon Center and Audubon Camp of Connecticut, has been associated with the Audubon movement intermittently since 1946. Author of "Who Lives In A Field" and "Young Naturalists' Handbook", Mr. Morton was teacher of Natural History and Conservation at the Potomac School, McLean, Virginia prior to assuming his present position with the Audubon Center in 1959. He has contributed photographs to the Audubon Magazine, Nature Magazine and leading newspapers. A member of the Board of Directors of the Atlantic Naturalist Society last year, Duryea Morton was the 1956 recipient of the Garden Club of America Conservation Teaching Award in Elementary Schools.



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March-April, 1961

# AUDUBON

Volume 63, Number 2  
Formerly BIRD-LORE

MAGAZINE

A bimonthly devoted to the conservation of our wildlife, wilderness, scenic areas, plants, soil and water

EDITOR John Vosburgh

ART DIRECTOR Frederick L. Hahn ADVERTISING MANAGER Andrew Bihun, Jr.

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MARCH-APRIL, 1961

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## Letters

### Albino Junco in Texas

By pooling the experiences of the many, you give each of us a broader comprehension of our subject. We enjoy your section "Letters" and have gotten much information valuable to us therefrom. One series on the pileated woodpecker "at suet" led us to Brown County, Indiana, where we were able to photograph a pair of these magnificent birds eating suet just outside a picture window in the Leland Seale home. We also saw and photographed pileated woodpeckers from windows of two of their neighbors.

Now, we would like to make a small contribution. Prompted by letters about albino starlings and grosbeaks, we wish to report an albino junco observed and photographed in Travis County, Texas, early in the spring of 1960.

The bird's head and other parts normally black, were white and peppered with black on a white background. We could furnish a picture, or, better still, come sit in our living room and we will show our movies.

DR. C. H. BROWNLEE

Austin, Texas

### Use General Funds to Preserve Wetlands

I wish to congratulate the National Audubon Society's president, Carl W. Buchheister, on his endorsement in the November-December 1960 issue of a suggestion concerning loans from the federal treasury to permit the buying of 4½-million acres of wetlands during the next 10 years, to be paid eventually by the proceeds from the \$3.00 duck stamp.

This is a fine idea; however, I think that under present conditions it is not sufficiently drastic. Duck stamp sales are plummeting downward and a closed season looms as a possibility. I will give two examples.

At Buckeye Lake as late as 1957 there were 10 duck blinds in one area which was the total number of blinds the Ohio Conservation Department allowed in that area (they charge \$10.00 for the privilege of a site on which to build your own blind). On a Saturday I would count 20 to 30 duck hunters in the area. This year there were only three blind sites occupied, the other sites having not been utilized, and the total number of hunters I have seen on two days was three.

My friend, Mr. J. LeRoy Weier, owns Middle Harbor along Lake Erie,

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## Introducing Our New Editor

**T**HIS is the first issue of *Audubon Magazine* bearing the name of our new editor, John Vosburgh, of Miami, Florida, formerly assistant Sunday editor of *The Miami Herald*.

In succeeding John K. Terres, he brings to the magazine the same dedication to conservation of our natural resources and the same intense interest in nature and the preservation of our recreation and wilderness areas as his predecessor. Mr. Terres resigned to resume his career as a nature writer.

Mr. Vosburgh, 49, was born in Johnstown, New York, where he began his career in journalism. He attended Syracuse University and later graduated from George Washington University in Washington, D.C., where he worked for a time as sports writer for *The Washington Post*. In Miami he also wrote a nature column for the *Herald* and was active in the Tropical Audubon Society.

As nature columnist he strongly supported the establishment of a refuge for the Florida key deer, adoption of final boundaries favorable to the Everglades National Park, protection of the nearly extinct Everglade kite and other conservation causes.

He is insistent on nature writing and illustrations of high quality and accuracy with the view of producing an ever-



Photograph by Lyle Byland, The Miami Herald.

**John Vosburgh**

improving *Audubon Magazine*. We welcome him to the staff.

Mr. Vosburgh, who became editor on January 1, has been working with the magazine staff since December 12. A veteran of World War II, he will live near New York with his wife and children, Diana, 10, and John M., 8.

CARL W. BUCHHEISTER  
President, National  
Audubon Society

a magnificent duck marsh of over 200 acres upon which he allows a few old friends to shoot occasionally. Following is a portion of his November 21, 1960 letter to me:

"It may be the last open season where shooting is allowed for some years. The season has been so generally dismal up along the marshlands and lakes of Ohio that on all sides one hears sentiment for the complete closing of all waterbird seasons for a several year period to save these fast disappearing fowl from complete extinction. . . . If all these watering places join hands and voluntarily prohibit shooting in their marshes for four or five years, this will have a tremendous effect upon others and of a certainty both state and federal officials and bureaus will join hands in saving these birds."

It is my belief that money for the preservation of our wetlands should come from a general appropriation. Isn't it a general appropriation that makes possible the draining of lands and destruction of marshes by the federal government?

DR. MILTON B. TRAUTMAN  
Columbus, Ohio

### Small Seed, Big Bargain

In the November-December 1960 is-

sue of *Ebba News*, the always-stimulating multilithed publication of the Eastern Bird-Banding Association, Professor Benjamin P. Burt of Syracuse, New York, offers a valuable bit of appraisal for all those who feed birds.

"I believe," he wrote, "that the large, medium and small sunflower seeds are all just about as attractive to birds. However, there is quite a difference in the weight of the husks in these three types. The medium sunflower seed is approximately 50 per cent husk, by weight, and the small sunflower only 38 per cent husk. Since sunflower seed is sold by the pound, and since the larger the seed the higher the price, it would seem to be much more economical to purchase the smaller sunflower seed."

C. ROLAND

New York City, New York

### Cedar Waxwings by the Hundred

I have been asked by the Alabama Ornithological Society to describe briefly a cedar waxwing migration in order to check the progress of this migration on its way north. Will be thankful for a space in wonderful *Audubon Magazine*.

Each spring brings to our enormous holly tree a migration of cedar waxwings, *Bombycilla cedrorum*, in greater or lesser numbers. Last year the tree

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Foley, Alabama ELIZABETH A. COE

#### The Missing Bobolink

After 11,000 miles, from June 11 to September 1, 1960, from California to Long Island, New York, and return, I did not see one bobolink. They used to be so plentiful in Ohio in the 30's.

Any word on this "seems-to-be-forgotten bird" will be appreciated.

Stockton, California E. R. JOICE

#### EDITOR'S NOTE

The bobolink breeds mostly north of latitude 40° N, so Mr. Joice should not have expected to see them until he

reached the latitude of St. Louis at least. Bobolinks have probably suffered from earlier mowing dates and insecticide use in recent years.

#### A White-Topped Purple Grackle

In Plainfield, Illinois (about 50 miles south of Chicago), I saw a bird which I think is an albino grackle. However, it was not wholly white. The top half was pure white, but the wings and lower part were black.

I have never seen or heard of a bird like this before. Is this very unusual?

MRS. ERMINE KESLER

Eureka, Illinois

#### EDITOR'S COMMENT

An albino grackle—or a partly albino one—is not altogether unusual, says biologist-author John K. Terres.

#### Albino Evening Grosbeak in Michigan

In November, 1959, I saw an albino evening grosbeak on one of the feeders and as this bird was only about three feet from my window, I had a good opportunity to observe it and get a color picture of it on my 8 mm. movie camera. I am certain it was a female by the few dark markings on it. The markings correspond with those mentioned by John R. Keller, "Letters," *Audubon Magazine*, May-June 1960. As the evening gros-

beak migrates east and west this could possibly be the same bird observed in the east this winter. Over the years, I have been feeding hundreds of evening grosbeaks daily, but I have never before seen an albino. This bird stayed two days and then left, but returned on April 10.

ROSE M. SYLVESTER

Sault Ste. Marie, Michigan

#### Bird Watching in Spain

We came to Spain on my husband's Sabbatical leave from the college where he teaches and the plan was for him to do research while I watched birds. I was to learn Spanish, too.

Accordingly, Peterson guide\* in hand, I went to the park of the Jardin Botanico. I hadn't been there too long before I saw a beautiful green woodpecker—as large as a hairy woodpecker—with a vivid yellow rump and a bright red head. He was easy to identify and I was elated! Birding in Spain was easy. I didn't need a guide to show me the birds. My elation was short-lived for I soon saw a warbler. Yes, I knew it was a warbler but what kind? I gave up. Most European warblers are drab, greenish-brown little birds, not at all like our showy warblers.

Each day we drive to a new town, and I bird from the car. We almost had an accident when I screamed to Alberto to stop when I saw my first hoopee! What a comical bird. It looks just like its picture with the funny striped crest. In the gardens of La Granja, I saw a nightingale. He attracted my attention by singing. His song sounded like the mockingbird's, but I have heard him in France at midnight singing a very different, exquisite song. He is brown with a chestnut-colored tail and reminded me a little of our hermit thrush.

On our way to Segovia I saw an azure-colored roller. It is the most beautiful bird I have seen and how I wish we could have stopped the car, but we had sights to see and no time to waste. Twice my husband stopped the car without being asked. Once when we saw a bee-eater on a telephone wire and again near Marbella, a flock of 27 flamingos!

Oh, yes, the only magazine I brought to read on the plane was the latest edition of *Audubon Magazine*.

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\* "A Field Guide to the Birds of Britain and Europe," by Roger Tory Peterson, Guy Mountfort, and P. A. D. Hollom, Houghton Mifflin Company, Boston, Massachusetts, 1954.

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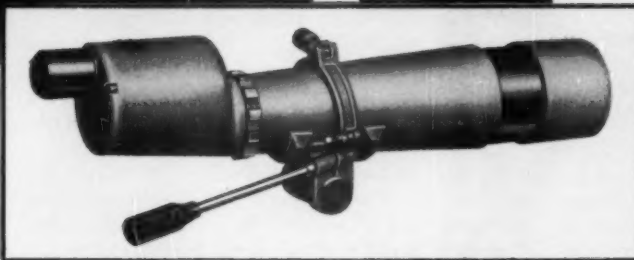
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## View from the Editor's Perch

Our spring edition is bustin' out all over but the view from the editor's aerie at Audubon House is about as springlike as Antarctica at this writing. Even the laughing gulls have deserted snow-covered Central Park. The reservoir is one big ice cube, and, for a laughing gull, that's nothing to laugh about.

Still, one must dwell on thoughts of springtime—and soon the poets will be dashing off appropriate sonnets and couplets. Cartoonists who never skipped school in their lives and whose unshod feet never trod anything rougher than a bath mat will depict barefoot boys playing hookey—fishpole on shoulder—trudging down country lanes.

Anyway, it's a glorious time of year and, if you don't think so, read Jean George's article in our March-April issue on the astonishing effects of springtime on birds. Even the clumsiest becomes a skilled engineer or a sort of Frank Lloyd Wright.

Mrs. George's description of how the baya bird in India installs lightning bugs in its nest offers an illuminating suggestion for avoiding monthly electric bills. We made sure to check this lightning bug disclosure with a top ornithologist. It's true, all right, but the bird doesn't do it to illuminate its abode. Seems the bird uses the lightning bug as a sort of ornament with which to attract its mate. "Transferral of sec-

ondary sexual characters to external objects" is the way it's phrased. Some male birds that don't have colorful plumage do this.

Highlight of our issue is the frank and forceful article by our new Secretary of the Interior, Stewart Udall. Another "first published" account is Helen Keller's eloquent statement on nature in "Saving a Nature Paradise," by Mrs. B. Tappen Fairchild.

On other pages the ruffed grouse drums, the opossum ambles with her hitchhiking brood and the bluebird bustles about its apartment in articles we think you will enjoy.

And Roger Tory Peterson returns after a visit to Tierra del Fuego, while Olin Sewall Pettingill visits a picturesque bird center in Michigan.

Even if the spray planes again dump clouds of lethal chemicals on our towns and countryside, they can't wholly spoil spring's arrival—but certainly will tarnish it a bit. Of course, the billboard people will keep trying to screen America's landscape from America's motorists with bigger and bulkier billboards and oil pollution may continue to trap thousands of birds in our coastal waters.

But what better time of year is there than this to blossom out with new efforts to halt such practices which might mess up a perfectly good springtime? JOHN VOSBURGH

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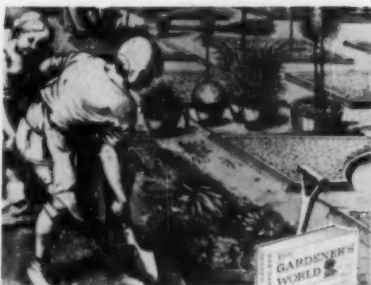
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# Roger Peterson's BIRD'S

## The Long Journey

The end of 1960, which held my Connecticut home in its frozen embrace, found me enjoying a Magellanic summer. I had joined Dr. Philip Humphrey on a Yale-sponsored expedition to Patagonia. Again I was reminded of that trite, but too true phrase, "travel is broadening." My concepts were changing about quite a few North American birds.

Popular bird books, so often written by those who have not traveled, usually parrot earlier texts by stating that the champion long distance migrant is the arctic tern. The golden plover is cited as the runner-up. Perhaps the tern will stand the scrutiny of even such a learned scholar as Robert Cushman Murphy, but I am not so sure about the plover.

We saw three golden plovers in their sober winter dress as far south as Camerones on the windswept coast of Patagonia, but the American Ornithologists' Union "Checklist" gives Bahia Blanca in Buenos Aires Province as the normal southern limit. On the other hand, two sandpipers, Baird's and the white-rump, which share the golden plover's summer range, reach the Beagle Channel and the southernmost islands of Argentine Tierra del Fuego, 1,100 miles south of the plover's pampas or 10,000 miles from their arctic home. In fact, they

were the only really common migrants from North America that we saw south of the Straits of Magellan.

On our northern beaches it is standard practice among bird watchers to comb the great flocks of small, sparrow-sized sandpipers known as "peep"—least, semipalmated, and western sandpipers—for the scarcer Baird's and white-rumps. But in Argentina we found ourselves reversing the procedure. We scrutinized the mixed flocks of Baird's and white-rumps for the smaller peeps. Not one did we find. Obviously they do not travel that far. But the farther south we went the more numerous did the two "not-so-common" waders become.

Although Baird's sandpiper is a bit buffier than the grayish winter white-rump we made certain of the identity of our birds by forcing them to fly. On the beach they appear to be about the same size and both have an attenuated look created by extra long wing-tips. But in flight the white rump-patch or lack of it makes recognition instantaneous. So does the voice; the white-rump has a high squeak, the Baird's a softer note. We saw flocks of as many as 200 to 300 white-rumps. Along our North Atlantic seaboard I have never seen a flock numbering more than a dozen birds.

In spring the white-rump, in rusty nuptial plumage, travels the plains east of the Rockies to its summer home on the tundra; we spot only a few strays along Atlantic beaches. We see more in the fall, but not enough to account for the swarms that forage among the polished pebbles of Patagonian shores.

It seems obvious to me that this bird, like the golden plover, takes the sea route, hopping from maritime Canada to the West Indies and South America. As evidence of this, Leslie Tuck, the Dominion Wildlife Officer, informs me that at times in fall the white-rump is the most numerous shorebird around St. John's, Newfoundland. David Wingate of Bermuda, a keen young student of migration, reports that a good flight of white-rumps passes through those sea-girt islands every autumn.

## EYE VIEW

Baird's sandpiper takes a different path, I believe. In the winter of 1957-58 when I sought out James' flamingo in the Bolivian altiplano, I found Baird's sandpiper on every pebbly stream in the high Andes between 14,000 and 16,000 feet. It is my belief that *bairdi* often travels the full length of the treeless backbone of both continents. There are just enough records from our western mountains to hint at this.

In Tierra del Fuego we often saw them with the white-rumps on the outer beaches but more often they were noted in small groups on river banks or on the gravel bars of trout streams that had their origin in Andean snowfields.

Flocks of greater yellowlegs wheeled over the Fuegian lagoons, but only once did we see the lesser yellowlegs as far south as the straits. Around Buenos Aires the smaller species minced along the margin of every lake and so did the mud-loving pectoral sandpiper. Along the ocean beaches, we noted black-bellied plovers, turnstones, knots, sanderlings, whimbrels and Hudsonian godwits, shorebirds that had traveled 7,000 to 10,000 miles from Canadian or Alaskan tundra.

Of the landbirds the barn swallow and the cliff swallow are my candidates for "greatest travelers." Many books single out the bobolink, but the two familiar swallows not only nest hundreds of miles north of any bobolink but may travel as much as 1,000 miles farther south. We saw them both as far down as Puerto Deseado in southern Patagonia and the barn swallow, at least, has been recorded from Tierra del Fuego.

My ideas changed too about the basic requirements of certain birds—their habitats. We peg some birds as "southern" (hence, of a warm climate) because in our country they thrive only in the southern part. How unexpected it was to see the Aplomado falcon on the plains of central Tierra del Fuego in a latitude comparable to that of northern Newfoundland. North Americans know this dashing falcon only from the hot deserts of the Mexican border.

The tiny ferruginous owl, another Mexican border species, also ranges across the Straits of Magellan to the southern tip of South America. So does the caracara, or a bird so much like ours that systematists labor the point. In fact, caracaras are positive-

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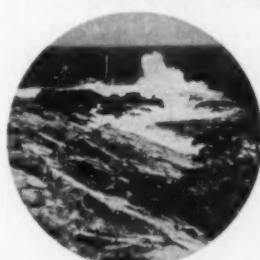


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ly abundant throughout Tierra del Fuego. I saw one bird that had lost the primaries in its right wing sitting on the shore of an island in the Beagle Channel. It was surrounded by flightless steamer ducks and as the tide rose it continued to sit disconsolately in the cold antarctic water. This was 55° south, the equivalent in latitude of southern Labrador.

We protect our caracaras jealously in Florida and south Texas, and no one objects, for our birds are strictly carrion eaters. But in Argentina, every estancia owner that we talked to despised the "carancho," as it is called. Apparently they kill new-born lambs and sometimes even ewes in labor. I have no doubt that they do this at times as do the black-backed (or Dominican) gulls that range far from the sea.

One rancher told us that he had set fire to "hundreds" of carancho nests during his lifetime but still they seemed to increase. It was a familiar story: an artificially created food supply—in this case, millions of sheep—had favored the birds' survival in the face of relentless persecution.

But why, if open plains and livestock fulfill the needs of the caracara, is the bird not to be found north of Texas? Why is it not found on the plains all the way to the prairie provinces of Canada?

The familiar turkey vulture also reaches Patagonia's tip. One day at Ushuaia, the southernmost town in the world, I watched eight turkey vultures wheeling over the Beagle Channel in the company of black-browed albatrosses and giant petrels.

It was less surprising to see the great horned owl on the scrubby plains, for of all the owls, *bubo* is the most successful and the most adaptable. From the edge of the subarctic tundra to the forests of antarctic beech and from Atlantic to Pacific this shy, resourceful bird has learned to live near man and to avoid him. I was surprised not to find the short-eared owl in the far south, although we had seen it often in northern Patagonia.

As for the burrowing owl, we found it abundant enough north of the Rio Negro where we saw as many as 50 in a day, but we failed to find it in Tierra del Fuego, although the

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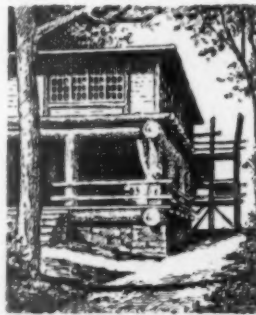
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range map in Professor Olrog's "Aves de Argentina" indicated that it should be there. We inquired about this. Yes, Robbie Reynolds told us, the burrowing owl did live in Tierra del Fuego when he was a boy, but of late years it has disappeared. The great flocks of sheep had packed the earth and trodden down the mole-like tunnels of the small rodents on which the owl preyed, and when the rodent disappeared the owl was no longer seen. This was confirmed by two or three other estancia owners to whom I talked.

Among the resident songbirds there were few old friends from the north. The house wren (conspicuous with ours but formerly regarded as a different species) lives not only in the gardens of Buenos Aires but also in the primeval forest of antarctic beech in the southernmost reaches of the Andes. There it lives a rather winter-wren-like existence and, although it has a detectably different dialect, its sputtering gurgling song is unmistakably that of a house wren.

Speaking of wrens, my greatest surprise was to find the short-billed marsh wren living on islands in the Beagle Channel. These were not migrants from the northeastern United States but resident birds. The pattern of bird distribution often defies ready explanation. —THE END

## IN THIS ISSUE

"We Need More National Parks," by Stewart L. Udall, in an exclusive article for *Audubon Magazine* by the new Secretary of the Interior.

Also published for the first time: Helen Keller's recollections of fragrance in a wild-flower garden as written for Mrs. B. Tappen Fairchild's article, "Saving a Nature Paradise."

## NEXT ISSUE

"Presidential Bird Watcher," by Richard L. Scheffel, revealing a relatively unknown pursuit of one of our great presidents.

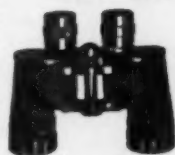
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By Stewart L. Udall  
*Secretary of the Interior*

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- More National Parks
- National Seashore Parks
- Abuses of Public Grazing Lands Must End
- A National Wilderness System
- 4,000,000 More Wetland Acres in Refuges
- More Recreation Areas

I APPRECIATE this opportunity to communicate with the members of the National Audubon Society and other readers of *Audubon Magazine*. You are representative of the millions of Americans who understand that our nation's future depends on how wisely we care for our natural resources and who are willing to exercise their prerogatives as free citizens through organizations, and individually, to support the necessary conservation programs.

My home is in a state that has 18 areas in the national park system, 5 national wildlife refuges, vast areas of public domain, varied irrigation projects, all kinds of mineral and grazing activities—and naturally we live so close to nature that it is often difficult to say where one's work ends and recreation begins.

As a member of Congress I have served six years on the Committee on Interior and Insular Affairs, which deals with problems and legis-

lation encompassing the wide range of Interior Department activities. With President Kennedy I believe this nation must seize the opportunities before it, and the new administration intends to act with as much wisdom and courage as God may grant us.

The pressures of our expanding population are compounded, as they affect our natural resources, by the necessity of maintaining our leadership in the economic world. We feel the pressures in many ways but they are visibly evident in the rapid disappearance of open spaces and wild lands as the urban-industrial complex sprawls across the countryside.

But open spaces and wild lands, and the wildlife that goes with them, also are essential to our national health and welfare as places where people can go for rest and recreation and to receive the kind of spiritual nourishment that comes

through communion with nature.

Our urban and industrial development moves apace, so we have to move quickly. This may be our last chance to enlarge the national park system, to safeguard enough wetlands and other special habitat to assure the future of wildlife resources, and to make certain that future generations may draw inspiration from our wilderness areas.

I look forward to, and shall work for, an expansion of the national park system against the needs of the 350 to 400 million human beings the population experts say may inhabit our land some 50 years from now. I hope the expansion can begin in this session of Congress with legislation to create more national seashore parks before these choice lands are lost to commercial uses.

Equally critical is the need to bring four or five million additional acres of wetlands into the wildlife



Secretary of the Interior Stewart L. Udall . . . "This may be our last chance".

*Photograph by Harris and Ewing*

refuge system before those wetlands are lost by drainage or filling—or priced beyond reach of the public purse.

I hope this Congress also will pass legislation laying down the guidelines and establishing the procedures

for a national wilderness system. Such legislation is now before Congress and deserves support.

We need to explore and develop the opportunities for public recreation on the 477 million acres of public domain lands that lie mostly in

the western states and Alaska. But the conservation task on the public domain is much greater than the recreation aspect. The past neglect and abuse of our public grazing lands should be recognized for what it is: a national disgrace. A farmer who took no better care of his fields than the government has taken care of our public domain would be scorned by his thrifty neighbors and probably would wind up in the poorhouse.

Substantial investments are needed in range rehabilitation, in reseeding, revegetation, erosion control and water conservation. Such investments will be repaid many times over not only in increased revenues to the federal treasury, but in sustained benefits to the local and national economies.

The needed investments require increased appropriations and additional technical and management personnel for the Bureau of Land Management. It is a national problem, and I hope we can count on nationwide support.

It will be the guiding principle of this Administration to seek the solution of all such problems on the basis of what is best for the nation as a whole. Decisions will never be made for the purpose of rewarding one special interest group against another, nor for the benefit of one segment of the economy to the detriment of the larger public interest. And we shall try never to forget that the "larger public interest" includes the welfare of future generations.

In conclusion I wish to commend the National Audubon Society for its own history of conservation service reaching back to 1905. The Society's educational efforts and your research and sanctuary programs supplement, at several vital spots, the programs of the U. S. Fish and Wildlife Service. An example is the Society's newly-launched, continental-wide bald eagle project, in which I understand the research branch of the Bureau of Sport Fisheries and Wildlife is actively cooperating.

It will be my policy to encourage this kind of cooperation, because much of the progress that has been made in wildlife conservation has been due to the wholehearted willingness of federal and state agencies to work together, and to work, in turn, with our citizen organizations.

—THE END

# The Miracle Builders

Once again our birds display their annual home-making magic  
as spring stirs a nesting impulse that goes back 100 million years



*Illustration by  
Walter Ferguson*

The swallows were actually diving into a hawk's nest for chicken feathers.

**By Jean George**

**I**T is spring. From seashore to mountain on the northern half of the globe the birds are launching a building boom more unbelievable than man's raising steel girders 102 stories into the sky.

I speak of nest-building with awe, for last year I witnessed the astonishing formation of an oriole nest—that spectacular gray basket that rocks in space from tips of branches. It evolved out of webs shredded from my orange milkweed plant and grapevine. No tool but a beak, no material that the wind could not

carry away, and yet, when it was done, it was stronger than a thunderstorm, more intricate than a child's cradle.

It hung in my tree all summer—a testimonial to nature's timeless intelligence. For a bird nest has evolved over the eons of time to conserve heat, and protect the bird when it is most vulnerable.

As I watched my Baltimore oriole compose, she fluttered on wing to strip an almost invisible strand from the milkweed plant. With this she flew to my elm limb where she hung it in scallops from the springy tip. I was transfixed, for she began to

weave in flight, wrapping the silk with spindle-neatness around the twig. Then she flew down for another thread, and then another.

After her day's work I could see a misty rope draped in three loops between the forks of the twig—the beginning of my oriole's solution to warming and rearing her eggs in a hostile world. Not even the egg-loving raccoon, designed to travel branches, could reach her nest.

The oriole sewed for 12 days on her creation. As the nest took shape, the very sight of it stimulated the reproductive activity within her body, and this in turn drove her

frantically on toward the completion of the nest. She worked from the top down. And as she neared the bottom she wove only from the inside—turning, twisting, fluttering in that basket until it fairly Charles-toned with the tumultuous thrashing of her body. When her task was completed, my milkweed plant was frayed like an old rope and half-dead; but the nest was an award-winner for beauty.

Other nests are imaginative: the simulated knot-hole of the hummingbird, for example, that is made from cobwebs and festooned with bark-like lichens, and the five- to six-foot-square apartment house of grass made by Africa's sociable weavers. But all nests built on the earth this spring are here because one day 100 million years ago, an ancient reptile-like seabird accidentally laid its eggs on the sticks washed up by the tide, rather than on the open sand.

Because of this strange accident, more of that ancient bird's eggs hatched than ever had before. The eggs became neither as cold nor as hot as the bare sand, for the sticks kept them more temperate. The offspring, when it became their hour to lay eggs, remembered the sticks they saw on the day they hatched, and sought the same conditions for their young. And so, that old, long-necked, scaly bird of the dim past

(still sporting teeth) began a whole new trend in survival—the nest.

Some of the more primitive birds today—like some sandpipers and the killdeer—prepare no nest, still lay their eggs on the ground. But evolution has taken care of them by giving them extremely precocious youngsters that break out of the egg, dry off in the sun and immediately run away to safety. Other nestless birds like the murre lay top-shaped eggs that cannot roll off the cliffs and ledges they choose to put them on. Still others, like pheasant and quail, offset the high mortality rate in their eggs by laying greater quantities on the chance that some will get through.

This is an ancient practice, still followed by the snakes and turtles from which the birds once sprang. And for some it still works. But

birds like the orioles, robins and swifts that have evolved further, with better-developed feet, bones, wing-feathers and nervous systems, have improved the nest as they themselves have improved.

One of the most highly developed nests in the world is that of the Indo-China swift whose nest the Chinese collect to make bird's nest soup. This exquisite jewel springs from the mouth of the female swift. As the nesting season nears, glands under the tongue of the female begin to swell and enlarge until they are enormous. She flies to her cave, stands against the wall and presses her beak on the rock. Now she is more like a spider than a bird, for the spider also emits such a viscous fluid. The fluid fonts crystal clear from her mouth, and she weaves it back and forth, lacing it to the

Author watched as a Baltimore oriole sewed a masterpiece of milkweed and grapevine. Photograph by Hal H. Harrison.



### The Author

Jean George writes as though she had been reared on a diet of nature study—which she was. Her father, Dr. Frank C. Craighead, was forest entomologist for the Department of Agriculture. At his side she learned of forest, field and stream in the wilder region of the upper Potomac River west of Washington, D.C., where she was born.

She is the sister of John and Frank Craighead, biologist-authors, and is the wife of Dr. John L. George, former biology instructor at Vassar College, now a government biologist. They have three children and live at Chappaqua, New York. She also paints and leads a Cub Scout den.

A former newspaperwoman, Mrs. George won the Aurianne Award for her book, "Dipper of Copper Creek," judged the outstanding children's nature story of 1959.

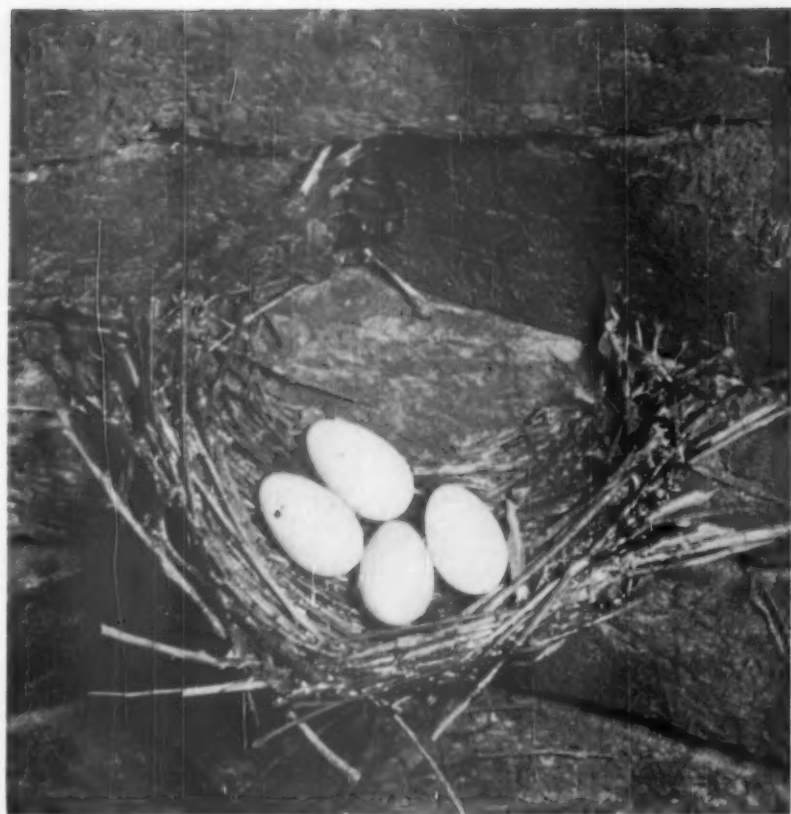
walls of the cave by the whipping of her body. The air hardens it and it is complete—a delicate glass-like receptacle for her precious eggs.

Other swifts also spin with glass drawn from under their tongues, but they generally add to it sticks and twigs like the chimney swifts of our own country. The viscous fluid is just glue. However, the tree swift of the Orient is almost as astounding as its kinsmen of the soup. This bird spins a nest so delicate that she cannot sit upon it. It is laced to the side of a limb, and in it she lays but one egg. Two would break it, for the creation is but one inch wide and less than an eighth of an inch thick. Unable to touch her crystal creation the female sits on the limb and puffs her feathers so that they lie like a warm scarf over the egg.

Few other birds have the materials for a nest so readily available. In fact, some will travel half the globe to find their construction materials. The parula warbler prefers either the Spanish moss of our South or the moss-like lichen called "old man's beard" of the Canadian North for its nest. Most birds are not so rigid and inflexible. Even mud is a general favorite for many—the robins, the swallows, the phoebes. But even such an available material as this can put limits on a bird. These birds cannot live in parts of the world where the clay is not right.

Mud homes have been very successful but not the perfect solution to bird-nest construction. Their success depends too much on the weather and the clay. A robin in our yard one spring was held back from nesting for four weeks by the rain. I would watch the female go to the garden, try to get a beakful of watery mud and then drop the flowing mess. Finally she found mud of the right consistency at the edge of the back porch, but no sooner had she formed a base than a downpour washed it away.

Some robins and almost all barn and cliff swallows have learned, like a potter, to let their mud cups set a day or two before lining and finishing them. I have seen a barn swallow, in damp summer weather, test the nest for three days before trusting its eggs to it. This bird not only limits itself somewhat by using clay, but adds one more hazard to its existence. It demands chicken



Do-it-yourself glue, produced under the tongue, enables a chimney swift to fasten its nest inside a well in daring engineering feat. Photograph by John H. Gerard.

feathers for warmth and decor. And it *must* be chicken feathers.

A farm in Michigan we often visited had a colony of barn swallows. One year the farmer sold all his chickens and we noticed that the swallows flew across the road for their feathers. Then the neighboring farmer sold his farm to a city commuter, who sold the cattle, pigs and chickens. Now the nearest chickens were three miles away, an impossible range for a barn swallow. We wondered what they would do.

June came, the swallows returned. They scooped up their clay and winged it up from the stream bank in their bills. Then they circled. Wider and wider they roamed, looking. Then they hung over the woods. Hours passed before we noticed their nests again. There to our astonishment were chicken feathers neatly tucked among the daubs of clay. We ran back to the woods and saw that the birds were circling over the nest of a Cooper's hawk! On the nest was a dead young chicken.

At the risk of their lives the swal-

lows were diving into a predatory hawk's nest to pluck feathers, answering an instinctive drive. For in the swallow, as in some other birds, the need for a special nest material is so old it cannot be changed. People who want barn swallows should provide chicken feathers. Barns are unimportant.

Straw and grass, world-wide materials, supply an abundance of nest-builders whose nests appear from the ground to the treetops, and are as varied as the house sparrow's mess, to the vireo's tidy tea cup. Even grass builders, however, have idiosyncrasies and get themselves in difficult situations by demanding trimmings on the grass that they cannot always obtain.

The bower bird of Australia, whose nest is drab, requires a blooming forest floor for courting. Using a shrub as a pole, it builds a waterproof tent, then surrounds it with patches of moss. Then it adds colored flowers, bright fruits, vivid fungi. Brilliantly-hued insects are brought from the forest to its castle

until it glitters with the diadems of the natural world. And all of these are laboriously, lovingly replaced as they fade.

Of all the nesters those that have chosen holes have the most success with their eggs and nestlings. In fact, hole-nesters are so successful that they need not go through as many biological tricks to keep their numbers high. They need not raise two or three broods a season like the sparrows, robins or warblers, or lay great quantities of eggs like the geese and pheasants. For their one small brood each season is secure in the hidden holes in the trees.

The most spectacular of the tree-hole nesters is the hornbill of Africa, whose bill is nearly as big as its body. In spring the gaudy female finds a suitable hollow tree and steps within it. The male then walls her in the hollow with scoops of mud until only her beak can reach out. Sealed in, she sheds most of her feathers and uses them to line the nest. Flightless and helpless, she remains imprisoned for weeks. During her confinement the male feeds her fruits from the jungle.

The cowbird of North America and the cuckoo of Europe have dis-

covered how to get out of the responsibilities of nest-making and young-raising by laying their eggs in the nests of others. In fact, they are such experts at finding nests for their eggs that when we were looking for sparrow and bunting nests for a scientific study, we had only to follow the cowbirds.

The coming of man and civilization has been the doom of many birds and beasts, but many species have been benefited. Phoebes, for instance, have so adapted to man's world that they almost never nest anywhere but under bridges. We often wondered what phoebes did for a nest site before man built bridges. One afternoon, in a deep bridge-less forest we found out. On the upturned roots of a storm-felled tree was a phoebe nest!

The barn owl originally was a "hollow tree owl" but with the arrival of European man and his barns and churches in the New World, the hollow tree owl happily gave up the highly competitive tree for the mouse-filled barn and belfry. And, with this nest change, came an increase in its numbers. Likewise the starlings and house sparrows shifted from tree hollows to the abundant

eaves, rainspouts and house trimmings of man.

Perhaps the supreme example of the happiest adaptation of bird to man is the pigeon of Wall Street in New York City which used paper clips and rubber bands to make her nest. A close second to her is a pair of bald eagles in Florida. They brought to their nest electric light bulbs, golf balls, fish plugs and a child's dress. In addition, they obtained from man a white rubber ball that the female incubated for six weeks after her real eggs had hatched.

With the coming and going of the horse in our culture, the birds have adapted and readapted. The chipping sparrow, once desperate for horsehair with which to line its nest, has been forced back to its original material, fine rootlets. Other birds that once demanded horsehair have shifted to facial tissues!

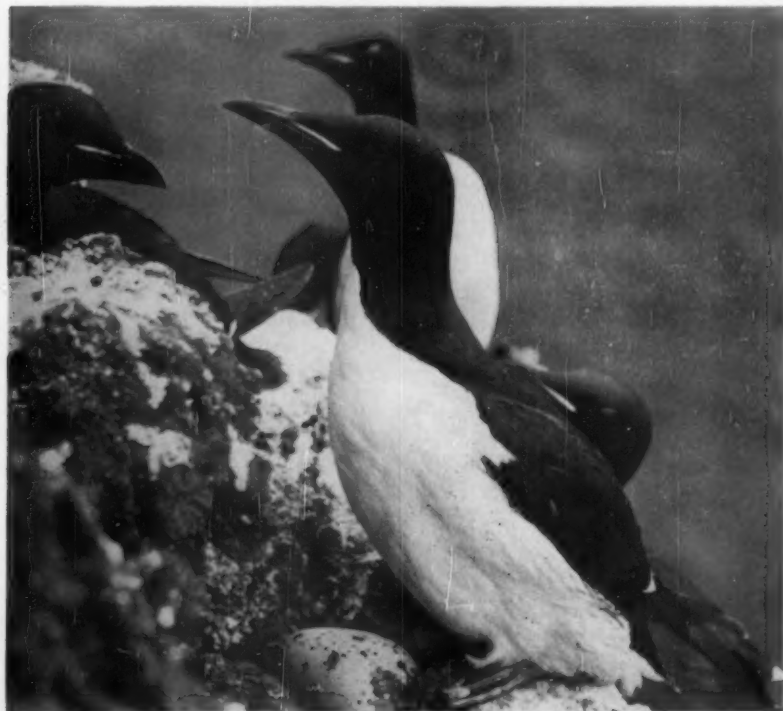
In India, unchanged by man or time, lives the most remarkable of all the bird nesters in the world—the baya bird. So ingenious is this nester that it creates two flask-shaped baskets not unlike orioles' nests except that the entrances are below. The bigger basket has two rooms, one a nursery where the mother, eggs and tiny young abide. The lower room is a family room where both parents and the eye-opened youngsters gather. But the other flask is for the male alone. Around the walls of the nest are daubs of clay in which—the natives insist—the baya bird fastens lightning bugs to illuminate its home.

The creation of a bird's nest requires so much time and energy that I often wondered if there were not a use in nature for old birds' nests. And so with a sense of waste I watched my oriole nest bounce empty in the summer rain and the autumn wind. One cold twilight I saw that it was shifting crazily and I opened my window and peered into it. Two bright eyes disappeared in a mound of string and cotton, then reappeared, as a deer mouse peeked out.

By March the nest had fallen to the ground, and one day I noticed a goldfinch struggling at what remained of it. She was salvaging the thistledown-like fibers for a lining in her own new home in the tree.

—THE END

Even if murrens spin top-shaped eggs, nature has designed them to prevent their rolling off cliff. Photograph by Karl W. Kenyon.



# SAVING *a*



Wildflowers flourish.

The story  
of the Fairchild  
Connecticut  
Garden,  
now a part  
of Audubon Center  
of Connecticut.

By Mrs. B. Tappen Fairchild

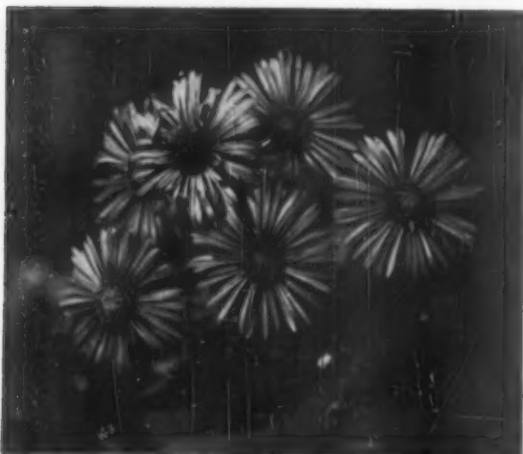
*With landscape photography  
by Samuel Gottscho.*

ON Quaker Ridge near Greenwich, Connecticut, overlooking a wide sweep of Long Island Sound, lie 127 acres of wild, natural beauty—saved for future generations by one man's foresight and the dedicated action of other nature-minded Americans.

This is the Benjamin Fairchild Connecticut Garden, also known as the Audubon Wildflower Garden and now a part of the Audubon Center of Connecticut.

Seventy-one years ago, Benjamin T. Fairchild dedicated himself to the task of developing one of the unique gardens of the world—one containing all the wildflowers, trees, shrubs, ferns, mosses, and other plants native to Connecticut and also many introduced species. As his friend, Mrs. Walter S. Franklin, recalls it, Ben Fairchild "was a boy who had a vision—a vision way ahead of his time that the day would come when the beautiful carpets of wildflowers would disappear.

"His great desire was that others should know the beauty, the forms, the colors of the little plants of the fields and meadows. Even the weeds were not 'weeds' to him. Benjamin Fairchild decided to find a spot where his dream might live. In Connecticut, his native state, he saw an



Ben replanted asters like these. Photograph by Leonard Lee Rue, III.



The Fairchild vision: To preserve the fields, flowers and trees of his Connecticut.



# *Nature Paradise*





Helen Keller's rapture at dogwood tree was captured by camera of Talia Manser.

old Merritt farmhouse with huge elms in the dooryard, a magnificent view and ledges for his plants. Shortly the farm became his, and when repairs had been made to the house, Fayrewood\*, he moved in.

"Every waking moment was exciting as he labored and planned trails to wind in and about his ledges and meadows. The neighbors and many of his friends thought him odd. Why go to all the trouble of saving wildflowers that grew everywhere like weeds? But he persisted, and when one of them started to plow fields

\* Destroyed by fire in 1942.

"Above all, save the fields and woodlands."



Benjamin T. Fairchild—his dream came true.

of flowers and replace them with stone walls he would send his farm wagon, driven by his devoted helper Russell Jones, to bring back the plowed-up blossoms.

"Thus the Fairchild Connecticut Garden was born. The wildflowers multiplied amid a simplicity of planting still enchanting, more than 20 years after the founder's death.

"It was a memorable experience to visit the garden with Uncle Bennie. Walking down the path past the Lily Gate where a magnificent owl, by sculptress Malvina Hoffman, sat on its rocky ledge, he would say, 'Look—the red and white trillium are bowing to us.' Then, as we went through what he called the Corot

*Continued on page 93*

#### THE AUTHOR

Mrs. B. Tappen Fairchild writes with an intimate knowledge and love of her subject. Her uncle, Benjamin T. Fairchild, was the founder of Fairchild Connecticut Garden. Her husband, B. Tappen Fairchild, nurtured the garden, protected it and finally turned it over to the National Audubon Society for a permanent nature preserve.

A personal friend of Helen Keller, Mrs. Fairchild has revealed here for the first time some of the most eloquent thoughts on nature that Miss Keller has ever expressed. They were first written as a foreword for a book on the garden which Mr. and Mrs. B. Tappen Fairchild were planning at one time.

The author lives at Cold Spring Harbor, Long Island, New York.



Wilderness Road winds through garden's woodland.



The Bluebird Man on his rounds.

A typical tenant, photographed by Allan D. Cruickshank.



## When the Bluebirds Came Back to Bergen County

*They Found the  
Welcome Mat Out*

*Photographs by the author  
except as noted*

**By Robert Gannon**

THE welcome sun of May warmed the earth, drove out the last remnants of winter and lifted the grass a little higher. It transformed tree buds into fresh-green leaves, and the warm rains pushed down into the rich ground to thick, thirsty rootlets. The sun also warmed Stiles Thomas, who, legs stretched before him, back flat against a paper birch, sat silent, listening to spring.

Suddenly, down from the trees flitted a pair of bluebirds. They landed on a limb, explored it, sped to a fence-post, looked it over, hopped to another tree, searching.

For Thomas, this was exciting indeed. He suddenly remembered that he hadn't seen bluebirds around his home town of Allendale, New Jersey, in years—suddenly realized that he missed them. Forgetting his warm-sun lethargy, he arose, hurried home to build a birdhouse. Within two hours a box was nailed to an old fence-post, and almost immediately, the male bluebird darted down to light on it. Two days later, the birds had built a nest, and soon four young were peeping within.

This was in 1953, the year that a man's mission was born.

"Why not bring the bluebird back to Bergen County?" Thomas asked. In the eight years since, he has.

Last year, with the help of Cubs, Explorer Scouts and the Fyke Nature Association, Thomas raised his total number of bluebird houses in an eight-town New Jersey area (Allendale, Saddle River, Upper Saddle River, Wyckoff, Ramsey, Franklin Lakes, Mahwah and Waldwick) to 105. Of these, 42 were used by bluebirds, 11 by house wrens, 7 by tree swallows and one by a pair of white-breasted nuthatches. Twenty-eight successful bluebird broods were raised, 13 second nestings were reared, and in four boxes, there were third nestings. In other years, Thomas's guest registry included black-capped chickadees and titmice.

Birds aren't the only beings that appreciate the shelters.

"You never know what you'll find when you open a box," says Thomas. "I've been surprised by red squirrels, flying squirrels, ants, wasps, white-footed mice, spiders and bats."

Thomas, 36, who owns his own insurance agency in Allendale, first became interested in birds, bluebirds in particular, when his father, former Representative J. Parnell



White-breasted nuthatch keeps up with Stiles—in bluebird house.

When Bluebird Man Stiles Thomas and wife checked this birdhouse they found . . . the nuthatch above.



### The Author

Robert Gannon, 29, is a native of Minneapolis who became a nature and science writer after attending Miami University at Oxford, Ohio. He says he "recently bought 12 acres of practically inaccessible forest in the Catskills in New York and do much of my writing there in a tent. That's where I did the bluebird article." His writings have appeared in several national magazines.

Thomas, gave him a copy of Clifford D. Moore's famous, "The Book of Wild Pets." Moore devoted a section to Dr. T. E. Musselmann, biologist and lecturer at Gem City Business College, Quincy, Illinois. For the last 20 years Musselmann has erected and maintained thousands of bluebird houses across the Illinois plains. So successful was he that Thomas was inspired to use the same program and techniques in New Jersey.

But why were bluebirds on the way out of Bergen County when Thomas stepped in with his helping hand? He explains it this way: "There are a number of reasons, but they all seem to fall under one heading: no nesting places. The natural spread of civilization is the biggest factor. Bluebirds like to raise their families in hollow trees and fence-posts and in old woodpecker holes. Man cuts down dead trees, fills up holes, prunes dead branches and knocks down rotting posts. This cuts down pretty well on the available nesting space.

"House wrens and those aggressive imports, the European starling and English sparrow, like the same kind of housing arrangement as bluebirds. When bluebirds come back north in the spring, they find sparrows, who have stayed on all winter, claiming squatters' rights. Starlings, too, move in and take over—and they eat berries, a main bluebird food. When the bluebird finally finds a place to raise a family, house wrens often sneak in and destroy the eggs, possibly to force the bluebirds to move out so they can move in."

Thomas says that, taken one at a time, these factors wouldn't have affected the total bluebird population. But with all these things against it, *Sialia sialis* has disappeared in many areas.

In the seven years that the program has been underway, The Bluebird Man, as his neighbors affectionately call him, has learned a lot about what the birds want in the way of house location.

"The first houses I put up," he says, "were either too high or too low. If they're too far from the ground I have to get something to stand on when I inspect and clean the boxes." The side of each of his specially-designed houses swings open.

"Placing the house a few feet from the ground discourages English sparrows," says Stiles, "but attracts children. Also, if the boxes are too low, the young hit the ground when they first try to fly. Houses should be from four to six feet from the ground, I've found."

At first he placed his creations in the woods around his three-acre home and the bluebirds weren't interested. Then he transferred the boxes to open ground closer to his house, and the birds moved in. A number of different locations and designs were tried the first couple of years, but from his notebook statistics, Thomas found that the houses should face south or southeast to provide sunshine, and should have drain holes in the bottoms so rain water could run out.

He also found that solid fenceposts and telephone poles are just about perfect for foundations—there have been no complaints from utility companies—but that trees should never be used. The first boxes were placed on metal pipes to discourage cats, but Thomas has had no feline problems, even though some houses, to the eye, look easily accessible.

The Bluebird Man has also found that his flashy tenants do not go in for fancy, painted construction.

"This is one area where I can be sloppy," says Stiles. "The birds ac-

tually seem to prefer homely, but sturdy houses made from old fruit and vegetable crates, costing practically nothing to build but a little time."

To find likely nesting spots, Thomas cruises the Bergen County countryside. When he sees a good place, he asks the landowner if it's okay to put up a house. Only once was he refused. "I don't know why; maybe they thought I was trying to sell them something," he reflects.

Originally questioning his objectives, but now welcoming Thomas, as well as the birds he has brought, is the William Randolph family of Upper Saddle River. Pride of Mr. Randolph's 28-acre estate is a dozen sheep, raised as a hobby. On more than one occasion Thomas was so engrossed in the needs of his birds that he failed to see a charging ram until it was almost too late.

Three summers ago Thomas was appalled to find maggots in most of his nests, larvae of the *Apaulina sialis*, a bloodsucking parasite deposited on bluebird young shortly after the birds are hatched. In warm, dry weather, the parasite seems to have no effect on the birds; in cold, wet weather it can kill them. To combat this, Thomas has experimented with an insecticide powder containing rotenone. Twenty-eight nest cups containing young bluebirds were doused with the powder, and all but five birds were successfully reared.

When he goes on his house-checking rounds, Thomas is often helped by members of the Fyke Nature Association, a local group of which he is past-president. As a rule, either Thomas or a member of the association checks the boxes every other week. The group also helps him send out instructions to all who write in; so far he has distributed more than 4,000 data sheets.

He asks only that people send a self-addressed envelope along with their requests. His home address is 74 West Allendale Avenue, Allendale, New Jersey.

Summing up, Thomas says: "Let's face it. People write songs about the bluebird. Volumes of poetry are composed about it. Yet, in many sections of America, the bluebird is disappearing. We are responsible for this sad state; it's up to us to bring the bluebird back. We can do it." —THE END

### Bluebirds and Springtime

Although the robin and bluebird share the honor of being spring's annual harbingers, the bluebird's role is actually "much more significant" according to "Birds of America," edited by T. Gilbert Pearson, with John Burroughs as consulting editor.

The reason for this, says this authority, is that few bluebirds remain in the North during the winter whereas many robins do. Thus, when you see a bluebird, it's considered a rather authoritative sign of spring.

Classed among the four disaster species for some years, the bluebird now seems to be making a comeback in the Northeast. *Audubon Field Notes* reported flocks of 15 to 25 being seen in Maine, New Hampshire and Vermont last fall.

# PETERSON WINS ANOTHER MEDAL

COLLEAGUES of Roger Tory Peterson at Audubon House are justly pleased at his being awarded the Gold Medal of the New York Zoological Society. This is especially true at *Audubon Magazine* where Roger Tory Peterson is one of our distinguished contributing editors.

This quiet and gifted man produces a succession of articles, nature films, paintings, field guides and other books so unobtrusively that it might seem almost routine procedure.

As a naturalist, Peterson has the soul of an artist and as an artist the soul of a naturalist. But, added to this combination are a prolific and articulate writing ability, the meticulous care of the scientist, and a whimsical sense of humor which add up to a man of rare talents and personality.

The Peterson name is as closely associated with birdlife as, say, John Burroughs with natural history or Theodore and Franklin D. Roosevelt with conservation. But, in addition to his writing "A Field Guide to the Birds," "A Field Guide to Western Birds," "A Field Guide to the Birds of Texas," and "A Field Guide to the Birds of Britain and Europe," done with Guy Mountfort and P. A. D. Hollom, the Peterson name is now becoming a byword with outdoorsmen other than bird watchers.

Many a conservation-minded hunter and fisherman carries his field directories and his principal publisher, Houghton Mifflin, has produced an entire series of nature books called "Peterson Field Guides."

Peterson received the Brewster Memorial Medal of the American Ornithologists Union in 1944, the John Burroughs Medal "for exemplary nature writing" in 1950 and the Saint Hilaire Golden Medal of the Societe Nationale d'Acclimatation et de la Protection de la Nature in France in 1957.

The Zoological Society medal, given him on January 9, 1961, has been awarded to such distinguished recipients as William Beebe, naturalist-author; Raymond L. Ditmars, curator of reptiles at the Zoological Society's zoo for many years; Yves-Jacques Cousteau,

oceanographer; Robert Yerkes, mammalogist; Sen. Fred Walcott of Connecticut, conservationist; Konrad Lorenz, the animal behaviorist-author and Rachel Carson, author and interpreter of the sea.

Roger Tory Peterson adds further distinction to this exclusive company.

—THE EDITOR



Photograph by Dorothy Dingley  
Roger Tory Peterson

## CITATION

*Roger Tory Peterson*

### ON PRESENTATION OF GOLD MEDAL OF NEW YORK ZOOLOGICAL SOCIETY

The words inscribed on this medal are "Inspired interpreter of birds for the benefit of man." Your career cannot be epitomized so briefly. You have worked arduously and brilliantly since your early youth for the benefit of birds as well as for the benefit of man. You have sensed that although birds could get along without man, the lives of innumerable people in every land are uplifted by the presence of the aerial creatures that you know and love so well.

It is said of you that your passion for birdlife, which you have had since your boyhood, "stemmed from the fact that these winged creatures are symbols of freedom." You have traveled tirelessly to the far reaches of many continents seeking greater knowledge and understanding. Your persistent search for detail of form, color and action and your extraordinary gift of artistry have proved invaluable assets in gaining so full a measure of success in the career to which you have given your thought and your energies.

You are not only one of the preeminent ornithologists of any age, but you are as well a true naturalist and a disciple that sings of the beauty and mysteries of all living things.

FAIRFIELD OSBORN  
President  
New York Zoological Society



Youngsters on sightseeing tour aboard mama 'possum make amusing camera study for Gordon S. Smith.

## Br'er Possum—Smart or Stupid?

Once chiefly confined to the South, our only marsupial is staging its own population explosion.

By Robert Bruce White

FAR down the road in the glare of my headlights, a small, low-slung figure strolled deliberately across the highway. As I slowed down and drew closer, the lights revealed a gray-clad, four-footed jay-walker weaving from the center to the edge of the pavement. As I edged over to pass, the pedestrian edged over too. Luckily for him, on my second try I was able to get by.

Thousands of other opossums are not so lucky, however. On two occasions, while driving 300 miles across New Jersey and Pennsylvania, I have counted more than 100 of these night-prowling mammals dead of traffic accidents.

Because of his nocturnal nature, few people realize that Br'er Possum's family — *Didelphis* — is distributed over most of the United States. Not so many years ago only Dixie was his homeland. But since

the turn of the century he has migrated both north and westward.

Whereas only a rare straggler was reported in Ontario before 1900 he is now in process of establishing residence there. Saskatchewan, too, is witnessing his slow advance; so are

### The Author

Robert Bruce White is field associate for the American Museum of Natural History. Readers will recall the enjoyable articles on other mammals contributed to *Audubon Magazine* by this perceptive retired colonel of the United States Air Force.

southern Vermont and New Hampshire. But his most surprising migration is to the Pacific Coast, to Los Angeles in particular.

There these "giant rats" which many people unfeelingly call them, have become almost a nuisance. More than 1,000 a year are picked up by the authorities in Hollywood alone, and 'possum traffic casualties in the city are numerous. I saw one in front of the Los Angeles Ambassador Hotel—in broad daylight, too.

That the opossum should be mistaken for a giant rat is not surprising. One of the best descriptions of *Didelphis*, and possibly the earliest, was written in 1608 by Captain John Smith, founder of Virginia, who said: "An Opposum hath a head like a Swine, a taile like a Rat, and is of the bignes of a Cat. Under her belly she hath a bagge wherein she lodgeth, carrieth, and sucketh her Young."

That "bagge" in which young opossums are carried and suckled places this fascinating animal in a class by itself: the marsupial class, to be specific. It is a member of the order to which kangaroos and koala bears belong, but the only marsupial on this continent north of Mexico. A marsupial is a mammal whose young are born at such an undeveloped state that the mother is obliged to carry them about in her pocket for several weeks.

Thus hazards begin early in the life of Br'er and Sister Possum. Less than two weeks after their parents

mate, the young are born—blind, deaf, hairless and so small that two dozen would just fill a teaspoon, and weighing only a fraction of an ounce each. Curiously, their tiny forelegs, developed out of all proportion to the rest of their embryonic bodies, are sharply clawed, and for good reason. Nature has imposed a cruel aptitude test for these little creatures—to fail it is to die.

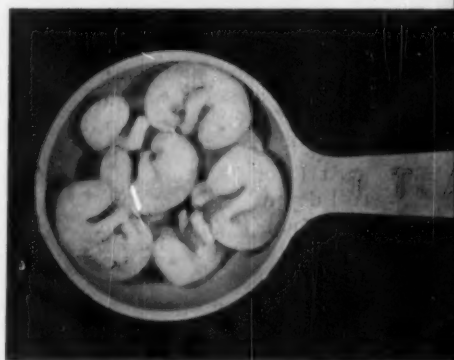
As soon as baby opossums are born they must find their way into the mother's "bagge" or pouch. Having forelegs with claws enables the newly born to drag themselves—by an overhead stroke as in swimming—across the two or three inches of curly abdominal fur separating them from the pouch entrance, thence up and in where milk, warmth and security await them. This they do by themselves with little or no assistance from mother.

Merely finding sanctuary in the pouch is by no means all their problem. The usual number of teats on the North American opossum is 13—nine is the minimum, 17 maximum—and her brood is ordinarily more numerous, sometimes 25. First come, first served is the rule. Once safely inside, each baby must find a life-giving nipple, then clamp on for dear life. This is accomplished by pressing the nipple against the roof of the mouth with its powerful tongue, pressing so firmly that only a vigorous yank by your fingers will detach it.

Babies arriving too late for a nip-



Persimmon is a favorite morsel for opossum. Photograph by F. E. Westlake.



Placing eight baby 'possums, eight weeks old, in a teaspoon, nature photographer Leonard Lee Rue, III, shows their relative size.

ple of their own must perish of starvation and exposure and such hazards usually reduce the litter to seven or eight before weaning is over. In the meantime, of course, the mother is obliged to forage the woods for food and to protect herself and her family as best she can. Old Br'er hasn't the remotest interest in his family.

After eight or nine weeks in the pouch, and attached to nipples all but the last few days, the youngsters develop fully. Baby Br'er, now the size of a mouse, is ready and eager to move into the open, to travel about on mother's back while clinging to her fur. Such a "passel o' 'possums" is one of the most amusing sights in nature, certainly one of her most unique ways of animal transport.

I remember one summer evening on Chicago's North Shore when I saw a mother opossum emerge from

Red fox, photographed by John H. Gerard, preys on opossum but hasn't slowed its expansion.



the roots of a tall elm where she had been using an abandoned woodchuck hole for her nest. Clinging tightly to tiny handfuls of fur, four beady-eyed, gray-furred babies were hanging on one side of her back, three on the opposite side, while behind her three less fortunate youngsters, one of them albinistic, waddled under their own power, clinging to her tail or one another's tail for guidance.

The riders, swaying this way or that with her flatfooted trudging, were rubber-necking like typical kids from the country on their first trip to town. All seemed to be enjoying the journey immensely. And in my own enjoyment of the sight, all desire to be a brave opossum catcher evaporated. When the troop finally noticed me, a lively scramble to safety ensued. I should like to report, as some writers have, that the kiddies pulled a fast disappearing act by climbing into mother's pouch; I think one or two did, but I couldn't see for sure in the deep twilight.

At 12 or 13 weeks the babies are still dependent on their mother, but will soon begin brief exploratory visits into the bush. For probably another fortnight they continue association with the family, then, growing more self-reliant, they seek their fortunes elsewhere, becoming what naturalist Ernest Thompson Seton called "fat hermits of the low woods." They are indeed solitary animals; no naturalist has yet reported seeing two feral adults together, even during the breeding season.

Br'er Possum eats anything people do and many things they don't, such as insects, snakes and carrion—even rats and mice when this slow fellow is lucky enough to capture them. According to several ecologists who have studied the opossum's feeding habits, it doesn't live entirely on animal food, but a mixed diet that includes much greenery, grains, seeds and fruit, especially persimmons.

During the summer months, however, insects are the most important item of his menu. Garbage pails and dumps attract him and stealthy visits to poultry sheds are sometimes charged against him. No doubt, he may kill birds occasionally and feed on eggs and nestlings, but it is my observation that his chicken raids

are so artless—climbing to the roost, grabbing the fowl by the leg, then falling off and making such a ruckus that the entire household is aroused—that he can never become an expert chicken thief.

Caught redhanded in a hen house, Br'er shows how a professional really plays 'possum. If dealt a sharp tap, he growls or hisses and makes a weak attempt to escape. Failing, he becomes semi-rigid, assuming what psychiatrists call a catatonic state in which he may be swung by the tail and tossed gently aside, without raising a flutter of his eyelids. Lying on his side, limbs partly extended, mouth open and drooling, teeth bared in a grin, tongue extended and touching the ground, eyes open but filmed, Br'er puts on a convincing death act. More important, his heart-beat and respiration actually diminish to the extent that neither may be readily detected.

Some scientists attribute this konking-out to shock, some say fright. Whatever the cause he may suddenly revive after danger has passed, and attempt to escape to less hostile surroundings. Playing 'possum, incidentally, has also been attributed to kangaroos, certain foxes, the Australian dingo, and several birds and insects. Whether this is proof of intelligence makes an interesting question—intelligence in wild animals being defined as their ability to avoid danger, procure food, and otherwise solve the immediate problem of living.

Dr. Carl Hartman, a world authority on opossums, has suggested they are the stupidest of all mammals. But William T. James, professor of psychology at the University of Georgia, has recently come up with evidence to show that opossums may be quite bright. James devised a laboratory cage having two compartments separated by a door with latches not too complicated for a smart little animal to open. In the evening he put an opossum in the box, dropped food in the adjoining compartment, closed and latched the connecting door, set up a camera and went to bed. When the opossum solved the problem of the latch, hence how to dine that evening, it set off a flash photographing itself in the act.

In one test a pole on the floor of the cage had to be pushed before

the latch would open. In the second test a single latch was on the door, while in the third there were two latches. And in the fourth, the real puzzler, the lower latch had to be lowered before the upper would function. The first three tests seemed elementary enough to Br'er; it took him 12 nights to solve the fourth. He finally gained his objective by breaking off both locks. From this James concludes that the opossum may be a lot smarter and more adaptable than we have previously suspected.

Outside the laboratory, however, he seems none too smart. Unlike the fox, raccoon and other barnyard pirates, he never seems to develop any respect for shotgun, rifle, traps or highway hazards. In expanding his range northward he has forced upon himself hardships of winter he is ill-equipped to endure as his paper-thin ears can't withstand severe cold. At times he seems so stupid you wonder how he has survived so many million years in competition with so many apparently better endowed creatures.

Unlike skunk, porcupine or weasel the opossum has only meager means of defense. He is preyed upon by man, by hawks, owls, foxes, dogs, wolves, bobcats, ocelots, coyotes, and other carnivores. His life expectancy is short. But he has several minor attributes which, with his great fecundity, have enabled his race not only to survive but to expand its range immensely.

For one thing, all his normal activity is nocturnal. Much of his time, both day and night, is spent in lonely, lazy seclusion in tree cavities or burrows abandoned by other animals. Further, Br'er is an excellent tree climber, in fact an essentially arboreal creature when away from human habitations. For his fancy footwork in the treetops he has feet with grasping toes, resembling the monkey's, and a scaly, prehensile tail used both for support and aerial brakes. His 50 sharp little teeth are more numerous than any other North American mammal's. His sense of smell, so vital to good foraging, is exceptionally developed, and he has a surprising capacity for recovering from broken ribs and shoulders.

But whether he is really smart or not, Br'er Possum just ain't sayin' nuffin. —THE END

## SAVING A NATURE PARADISE

*Continued from page 85*

Glade, we would discover clusters of cypridium under the white birches. We would climb the steep path through the grove of dogwoods, reach the summit and turn to look down on their blooms spreading like a white cloud.

"Uncle Bennie would exclaim, 'Look, that's the Marigold Meadow. In the autumn you'll see the wild artichoke, joe-pyeweed, asters of all species and colors glowing among the rose of the marshmallow. It's my belief that nowhere will you see such glorious concentration of bloom.'

"Late in the afternoon we would stand by the turtle house and gaze at the twilight fading behind Sunset Cliff and Uncle Bennie would say, 'God has given us great gifts but nothing enriches our lives more than the small things we tread on and do not see. God gives us the grace to see and to love what we see.'"

One October day Helen Keller walked through the garden with me. Blind and deaf from childhood, she has, as millions know, nevertheless gained an awareness and understanding rare even in people who have their sight. As she, her companion Polly Thomson, my daughter, Talia Manser, and I moved

down between the Twin Elms, someone picked up a leaf, placed it in Helen's hand and said, "This is a black oak leaf from the tree that towers above you." Helen's fingers touched it carefully, lovingly. "No," she said. "it is the leaf of the red oak." And she was right.

I showed her the rocks of curious forms and shapes discovered by Uncle Bennie in many a farmer's wall—the Sunning Seal, the Meditative Sheep, the Cock of the Walk. She knelt and traced these creatures with her mobile, expressive hands. The next thing she "saw" was a dogwood tree. She put her arms around

*Continued on page 99*

# ★ ★ ★ NATURE IN THE NEWS ★ ★ ★

MAN, THAT'S MIGRATIN'!

*Reprinted from  
The Miami Herald, December 15, 1960*

## Duck Flew Down at 600 Miles an Hour

By E. V. W. Jones

Willie, the wayward duck, migrated 1,190 miles from Detroit to Florida Wednesday without a single flap of the wings.

He came at 600 miles an hour in the pilot's compartment of a jet plane in two and a half hours. It would have taken him a week to 10 days had he done his own piloting and navigating.

The story of the hitchhiking duck began two weeks ago when Al Kleis, a Michigan conservation officer, found Willie solidly frozen in the ice of a lake near Chelsea. Kleis hacked him free, nursed him back to health.

Willie is a wood duck, and should have migrated weeks ago. Dozens of his kinsmen are living in idle luxury in the Great Cypress area, eating succulent Florida plants with an occasional bug and minnow.

Willie was addressed to Dr. Oscar Owre, a professor of the University of Miami zoology department, who attended the University of Michigan. The doctor had appointments that kept him from meeting Willie and planning his freedom, so Eastern Air Lines called on the Tropical Audubon Society.

Dade Thornton, president, accepted custody of Willie from Capt. Parker Cole, pilot of the jet inaugural flight from Detroit, and clapped Willie in the Crandon Zoo hospital.

Along about Sunday, Thornton will

take the wayward duck to the edge of the cypress swamp 128 miles west of Miami and release him.

But first Willie will be banded, for the scientists want to know what a wood duck would do after a forced migration.

Will Willie wander back to Michigan? Or will Willie become attached to his new wood duck friends and migrate to their summer home, wherever it is?

It is hoped that his band will provide the information, for Willie won't say.

Willie the Duck with Dade Thornton

... finds hitch-hiking easy on the wings





# THE PRESIDENT REPORTS TO YOU

By Carl W. Buchheister, President of the National Audubon Society

## Senator Anderson Pushes Wilderness Bill

The newly convened 87th Congress can make a place for itself in conservation history, and win the enduring gratitude of future Americans by passing the Wilderness Bill. A new draft of the bill (S.174), pared to the rock-hard essentials but stronger and more incisive for the honing, has been introduced by Senator Clinton P. Anderson of New Mexico. Similar bills have been introduced in the House by conservation-minded representatives.

Its sponsorship by the distinguished New Mexico senator bodes well for passage. Anderson not only is the new chairman of the Committee on Interior and Insular Affairs, to which the bill was referred, but he is one of the ablest men in the Senate. As sponsor of the 1955 law that solved the problem of mining-claim abuses on the public lands, and more recently of the act creating the Outdoor Recreation Resources Review Commission, he has earned his spurs as one of the effective conservation leaders in Congress.

If the House and Senate Interior Committees can rise now above the opposing pressures of the mining, lumbering and livestock groups that constantly seek special privileges and economic advantages on the public lands, the nation may soon have an historic, new conservation law.

Without such a law there is likely to be no true wilderness left in America for your grandchildren, and mine, to know, to study and to enjoy.

## History Will Say Thanks to Secretary Seaton

To be a good Secretary of the Interior, or to run any great federal department with order and consistency, takes rare administrative skill. To be a great one requires vision and courage. Secretary Fred A. Seaton had all these qualities.

Retired along with the rest of the Eisenhower administration according to the American way, Mr. Seaton goes out of office bearing the admiration of all conservationists. It is our opinion that if history is fair, he will have the admiration and gratitude of generations yet unborn for his leadership in conservation.

He was a steadfast supporter of the intangible values which Americans treasure in the national parks and wildlife refuges, the values which set these areas apart from lands devoted to commodity production. He was a man who could understand, for example, that the intangible values of the great salmon and steelhead runs up the tributaries of the middle Snake River, combined with their economic values, might outweigh in public benefits the monetary calculations of returns from big



Ex-Secretary Fred A. Seaton  
... a constructive record.



Photograph by Fabian Bachrach  
Sen. Clinton Anderson  
... a far-seeing bill.

dams that would destroy the fish runs. He had the courage to oppose the dams and defend the fisheries before the Federal Power Commission, to the consternation of public power and private power advocates alike.

Almost on the eve of his departure from office, Secretary Seaton signed executive orders, which he was empowered to do under law, carving out three great federal wildlife ranges from the vast public lands in Alaska. He signed these orders despite the nearly unanimous opposition of the ruling politicians in the new state because he thought it was in the best interests of the whole public, of the whole nation, to do so.

Thus, in one day, December 7, 1960, Secretary Seaton added more than 11 million acres to the total of national wildlife refuges in these areas:

*The Arctic National Wildlife Range*, approximately 9 million acres of mountains, lakes, marsh and tundra in the northeastern Alaska wilderness, home of grizzly and polar bears, Dall sheep, wolverine, great herds of caribou, nesting grounds for nearly 100 species of birds and numerous other wild animals.

*The Kuskokwim National Wildlife Range*, 1.8 million acres of first-class nesting grounds for waterfowl on the Yukon-Kuskokwim river delta of western Alaska.

*The Izembek National Wildlife Range*, approximately 400,000 acres near the western end of the Alaska peninsula, a vital gathering and feeding place for migratory waterfowl.

Still other national wildlife refuges came into being before Secretary Seaton left office. On January 4, by executive order, he created the San Juan National Wildlife Refuge, 52 acres of rocky islands off the coast of Washington in the Strait of Juan de Fuca. The refuge is a natural haven for oyster-catchers, glaucous-winged gulls, cormorants, puffins, guillemots, band-tailed pigeons

and other migratory birds. It includes Turn Island, Bare Island, Colville Island, Bird Rocks and Williamson Rocks, all part of the San Juan archipelago.

In two other withdrawals affecting 82 separate parcels of public land in South Dakota and North Dakota, Secretary Seaton on January 5 and 6 set aside 3,346 acres of prairie marsh and pothole country for waterfowl breeding and nesting purposes.

We salute you, Mr. Seaton, for these magnificent gifts to future Americans.

### **Our Hearty Welcome, Mr. Udall**

As Mr. Seaton departs with our high esteem, we have equally high hopes for his successor. In behalf of the National Audubon Society, I extend congratulations and all good wishes to Mr. Stewart L. Udall, new Secretary of the Interior in the Kennedy cabinet.

Mr. Udall is an outdoorsman, and in three terms in Congress as a representative from Arizona, he demonstrated that he is a man of intelligence and courage. He, too, can comprehend the special values, not to be measured in dollars, of wilderness and wildlife, of unspoiled seashores and irreplaceable scenery. He knows, if any one does, the tremendous opportunity for leadership that exists in the neglected, abused and over-grazed public domain lands in the western states.

This is a conservation problem not yet attacked with vigor by any national administration.

### **On the Retirement of Mrs. Finney**

Almost with every issue of *Audubon Magazine*, it seems, we are saying a grateful farewell to a retiring member of the staff. Such is the inexorable march of time. Now it is Mrs. Mildred Finney, key employee and beloved associate since 1942, whose devotion and ability literally built the Society's Service Department into a genuine service to our members and to the public, and into an important source of income for our conservation programs.

We are glad Mrs. Finney, despite official retirement, will be close at hand when we need her counsel and the leavening influence of her stimulating personality. Did you ever get scolded by Mrs. Finney, and leave feeling at the same time both chastised and glad that you gave her the cause? It's a good experience!

### **West Coast Convention March 25-28**

Four days of significant discussion and study with capacity crowds are the prediction for the biennial Pacific Coast convention of the National Audubon Society at Asilomar, California, March 25-28. Host Branch is the Monterey Peninsula Audubon Society, and William N. Goodall, West Coast representative of the national Society, is in general charge of arrangements.

The resources of our 49th and 50th states, Alaska and Hawaii, will receive special attention in a program built on a "Tundra to Tropics" theme. Speakers will include Robert F. Scott, leader of the Cooperative Wildlife Research Unit at the University of Alaska, Dr. Robert W. Hiatt, dean of the graduate school and director of research, University of Hawaii, and Dr. Olaus Murie, director of the Wilderness Society, the latter speaking on "Two Frontiers."

Roger Tory Peterson will be there along with other notable conservationists. Field trips and an ocean boat trip will add to an interesting meeting. If you plan to attend, write or wire at once for reservations to Audubon Convention, 2426 Bancroft Way, Berkeley 4, California.

### **500 Visit Corkscrew in Week**

More than 500 persons visited the Corkscrew Swamp Sanctuary in Florida during Christmas week in a demonstration of the growing popularity and educational value of this remarkable area. New attendance records are to be expected as the fame of the "Emerald Kingdom" spreads.

Damages caused by Hurricane Donna to the boardwalk and other facilities at Corkscrew have been repaired and a new residence building for staff personnel is now in use. The big blow toppled some of the ancient cypress giants and snapped the tops off of others. Despite these changes in its canopy and skyline, the swamp is as beautiful as ever and, if anything, more interesting, and the wood storks are nesting again by thousands.

### **Bald Eagle Study Off to Good Start**

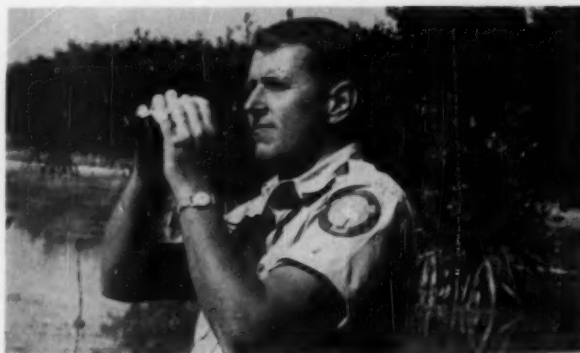
Public response to the National Audubon Society's continental bald eagle project has been most encouraging. More than 1,000 letters have been received with helpful information or suggestions, and these are being carefully combed by Research Director Alexander Sprunt, IV, and his assistants.

Many of the letters came in response to an announcement of our project carried by the *National Geographic Magazine* in connection with an exceptional article on the bald eagle by Frederick Kent Truslow and illustrated by his magnificent photographs. If you are not a member of the National Geographic Society, borrow a copy of the January issue, or look it up in your public library.

If you are not already inspired by the importance of our bald eagle study, the Truslow article will convince you. We deeply appreciate the cooperation of the National Geographic editors.

Equally gratifying, and going far toward assuring the success of the survey, has been the response of state and federal wildlife officials, whose assistance was solicited by Mr. Sprunt. The greatest reservoir of biological knowledge and competence, of course, resides in the trained and dedicated men who work for the public conservation agencies.

*Continued on page 112*



Alex Sprunt, IV, on the job, knee-deep in water. Photograph by George Porter.

# Bird Man OF THE Seven Seas

**At 73, famed ornithologist  
Robert Cushman Murphy pursues a  
busier schedule than ever.**

**By Neal Ashby**

**A** TALL, slim scientist with the springy step of a young camp counselor is still adding steadily—at the age of 73—to mankind's knowledge of birds the world over.

"I'm busier now than when I retired five years ago," said Dr. Robert Cushman Murphy, one of the world's top ornithologists, in his book-laden office at the American Museum of Natural History in New York City. "I've always thought it a calamity for an individual to retire into nothingness."

Rather young looking to bear the venerable title of emeritus, Dr. Murphy is the museum's Lamont Curator Emeritus of Birds and research associate in oceanic birds. For 40 years he has been ranging over the globe exploring and enlarging the frontiers of science. Last winter he ventured into the Antarctic after Navy doctors pronounced him in fit condition for so arduous a journey. This was his 14th major expedition, taken for the National Science Foundation to study flying birds, penguins, seals and whales of the south polar region.

It was Dr. Murphy who originally freed bird study from national boundaries and extended it to far-off islands and coasts. When he began his careful investigations of oceanic birds nearly half a century ago, naturalists neither knew about them nor were they especially interested in them. Almost single-handedly, he

discovered enough provocative facts to capture his colleagues' interest. His "Oceanic Birds of South America" (1936), in two bulky volumes, is the basic reference on the subject. Even today the project which most occupies his busy retirement is a

## **The Author**

Neal Ashby is Sunday Editor of *The New York Mirror*. A native of Des Moines, Iowa, he has written a Sunday column about Long Island for a number of years, often dealing with wildlife subjects. He first met Robert Cushman Murphy when he went to the Murphy home to interview his wife, Grace Barstow Murphy, about a conservation matter.



**Robert Cushman Murphy in mid-career  
Portrait by Walter Ferguson**

book on the web-footed petrels and their much larger relatives, the albatrosses. He expects to complete this in about three years.

Dr. Murphy has specialized in the study of many birds other than seabirds. During his many years as chairman of the American Museum department of birds, he had charge of the world's most important single collection and shaped some of the finest existing public exhibits. James P. Chapin, long an associate of Murphy's at the museum, said, "Bob pushed the work ahead as Dr. (Frank M.) Chapman, his predecessor, had planned it. The rest of us were glad to follow."

Ask Dr. Murphy if he has noted many birds about his small, wildlife-

rich acreage on Long Island Sound and he will give you an exact count—179 species.

A long and productive career lies behind this scholarly scientist. He sailed far down the South Atlantic to the island of South Georgia in 1912 to study petrels, albatrosses, penguins, sea elephants and whales. Restless and unrestricted to any one field of natural history, he assembled a complete group of desert wildlife from lower California and Mexico for the Brooklyn Museum.

On his first trip to the Peruvian coast 40 years ago, he met new species of cormorants, boobies and pelicans. On Central Chincha Island, he saw 6,000,000 closely-packed cormorants, their iridescent greenish backs glistening in the sunlight. His principal achievement here was to call attention to the significant effects on all life of the cool Peruvian coastal current. He described how the upwelling of cold water from the ocean depths creates a uniform low water temperature at the surface and brings to the top rich minerals which help to make plant life flourish and contributes to a lush habitat for birds and other animals.

Along the coasts of Ecuador and Colombia, Dr. Murphy encountered a maritime life zone entirely different from that under the influence of the Peruvian current. He deline-

ated sharply the variations between life in and around these tropical waters and that in the Peruvian waters to the south.

"Variations of water temperature, salinity, mineral content and other factors separate various species of seabirds just as effectively as landbirds are divided by climate, mountain ranges, and food supply," he explained. "The Peruvian booby, for example, is replaced in warmer waters by the blue-faced booby."

In the Mediterranean in 1926, Dr. Murphy collected seabird specimens of which the American Museum of Natural History had few or none and acquired its first type-series of Mediterranean temperate zone fishes. Another biological boundary, the Antarctic Convergence, concerned him in the polar seas. Capturing penguins, he found that "you have to seize them from behind and cradle them in your arms." He banded them and proved different species live on either side of an imaginary line separating the Antarctic and the sub-Antarctic.

But expeditions have been just one part of Robert Cushman Murphy's brilliant career. He was treasurer (1929-37), and then president (1937-41) of the National Audubon Society and has been prominent in such other nature-study, scientific or conservation bodies as the American Ornithologists' Union, American As-

sociation for the Advancement of Science, and the International Committee for Bird Preservation.

A successful author, he has written "Bird Islands of Peru" and "Logbook for Grace," the latter a report to his bride on his months-long stay on South Georgia when he was just out of Brown University, plus hundreds of articles in popular magazines and scientific journals. He has been awarded the Cullum Medal of the American Geographic Society for general contributions in the field of bio-geography; the Brewster Medal of the American Ornithologists' Union and the Daniel Giraud Elliot Medal of the National Academy of Sciences, both for "Oceanic Birds of South America," and the John Burroughs Memorial Medal for natural history writing. Several birds, a mountain, a fish, a plant, a spider, a bird louse, and a lizard bear the Murphy name in one form or another.

To a dedicated scientist like Robert Cushman Murphy, "the ideal expedition member is along to work, not seek adventure," but still adventure has pursued him. He was dragged across the South Atlantic in a whaleboat by a harpooned 50-foot sperm whale, once dodged the charge of a 1,200-pound bull sea elephant, rode out howling gales at sea, and has been bitten by the deadly fer-de-lance snake. He wrote the first scientific descriptions of many species of birds, among them warblers, flycatchers, and a rail on Pacific islands, and, in his own oceanic bailiwick, the diving petrel of the South Atlantic and the *Pterodroma ultima* of the South Pacific (1940), believed to be the last distinct petrel type in the world.

In 1951 he discovered in Bermuda a colony of cahows—a petrel which had been thought to be extinct for some three centuries. No living cahow had been reported since the early 1600s, when English settlers arrived and found them plentiful, palatable and desperately needed as food. They literally ate up the population of these petrels in the Bermuda Islands. From time to time early in this century, shreds of evidence, if no live birds, hinted that the nocturnal, burrowing cahows might still exist.

When Dr. Murphy predicted—rashly he felt—that he could find

Photographs courtesy of American Museum of Natural History.



Murphy finds a cahow, believed extinct since 1600.

them, funds were provided, a small expedition mounted, and he and Mrs. Murphy were on their way to Bermuda. After patient searching of islets in Castle Roads, Dr. Murphy and a colleague, Louis S. Mowbray, earned the pulse-quicken reward of finding a true cahow petrel snug in the noose at the end of a long pole they had poked into its burrow deep inside a rocky niche.

"We found several pairs on the little isolated islands where they had contrived to exist in very small numbers in spite of persistent attacks by rats and tropic-birds," he recalled. "We held them, photographed them and found their eggs, but, of course, took no specimens. The Bermuda government has now established a program to protect them."

A corollary of all of Dr. Murphy's exploits and achievements has been his unconscious radiation of inspiration to all those who have worked with him, whether at the museum or elsewhere. Lee S. Crandall, Curator Emeritus of the Bronx Zoo, says: "Dr. Murphy is meticulous, devoted and authoritative. He deeply respects the work, and I have found him somehow able to convey that respect to the people around him."

And today the Murphy career is as alive and vibrant as ever. He works in his trophy-laden study daily, except for the one or two days a week he spends at the American Museum in New York City. There is plenty to be done if you are to remain one of the leading authorities on an order of birds. And Dr. Murphy is generally thought to be unduly modest when he acknowledges himself to be one of the half-dozen men over the globe who know the most about the petrels and albatrosses. There are new specimens to examine, and a continuing flow of new literature originating in this country and abroad to digest. Dr. Murphy continues, too, to publish scientific papers regularly.

"They are a very ancient order of birds," he said of the petrels and albatrosses. "Some fossils have been found that are believed to trace to the lower tertiary period. These birds are found wherever salt water extends—and the seas, of course, make up seven-tenths of the earth's surface. The petrels and albatrosses are distinguished by having nostrils in the form of tubes on the tops of their bills," he continues. "They fly



Young red-footed booby does some Murphy-watching at Canton Island, New Zealand.

as much at night as they do in the daytime. Many species never come to land at all except for reproduction. It's not a large order—there aren't more than 100 species—but it has the greatest size variation."

Even today, the oceanic birds—the petrels and albatrosses, in particular—cannot claim droves of students and admirers. Why did Dr. Murphy pick them as his specialty as a precocious young ornithologist half a century ago?

"When I began my scientific life, there were relatively few oceanic birds, especially petrels and albatrosses in museums," he said. "Dr. Chapman, who, in my early days, was Curator of Birds at the American Museum (where Murphy was a young assistant as far back as 1906) said they were the least interesting order to study because nothing was known about them. His words only spurred me on. And so, from one of the least interesting groups, they certainly have become one of the most interesting."

One of the finest writers among scientists, Dr. Murphy is now concentrating on a book summarizing all knowledge about petrels and albatrosses to date. It will be the first monograph on this order since Godman's in 1910—when Murphy was 23.

Born at Brooklyn Heights, April 29, 1887, he has been a Long Islander all his life. His family first spent summers 70 miles east on Long Island, and later they moved there. Dr. Murphy's leadership of such

local scientific groups as the Long Island Biological Association and the Long Island Chapter of Nature Conservancy, has prompted nature writer Edwin Way Teale, who formerly lived at Baldwin, Long Island, to recall: "There was something happening all the time. That's still characteristic of Murphy. He's been amazingly productive since he retired, in conservation, traveling around the world (which Murphy and his wife did privately a few years ago), at the museum and in writing."

As a boy, Dr. Murphy liked museums, particularly the Brooklyn, where he was befriended by the director, Dr. F. A. Lucas. The boy and his mentor talked lengthily of whaling, deep sea life and polar regions. This was without a doubt a period which deeply influenced his career. The aspiring naturalist graduated from Port Jefferson, Long Island, High School in 1906 and worked a year before entering Brown University.

Soon after his graduation from Brown came the opportunity to join the South Georgia expedition, and young Murphy felt he must decline. He had just become engaged to Grace Barstow, whom he had met at college, and he could not justify disrupting their nuptial plans by a personal adventure that would last nearly a year. But Miss Barstow insisted that he go—and wisely—for the work Dr. Murphy did on that trip in extending scientific knowledge of this portion of the earth es-

tablished him as a ranking young scientist. They were married at once and honeymooned five months before his departure. Mrs. Murphy has been his principal field associate on expeditions ever since.

On his return, Dr. Murphy was named Curator of Birds and Mammals at the Brooklyn Museum and in 1920 became Associate Curator of Birds at the American Museum of Natural History. James A. Oliver, director of the American Museum, calls Murphy "one of our most active and versatile scientists . . . whose long list of published contributions covers many animal groups and includes major works in both scientific and popular literature." Perhaps Dr. Murphy's pet project there has been the Whitney Memorial Hall of Pacific Bird Life, of which he had charge throughout its development.

Dr. Murphy did his graduate work at Columbia University. Brown later conferred on him the degree of Doctor of Science. He holds an honorary degree from the oldest university in the Western Hemisphere, the University of San Marcos, Lima, Peru, and dwells at "Briarlea," a 50-year-old colonial-style house on seven untamed acres, including 204 feet of beach front, on Long Island Sound, in the village of Old Field. Mrs. Murphy is also an author and conservationist. They have three

children and several grandchildren.

As he trims and tidies the grounds around his home, Dr. Murphy has the twittering company of landbirds like the towhee, wren and chickadee. His visitors include scientific colleagues from all over the world. Young naturalists and students come also, presumably for the opportunity to meet the venerable scholar and get his advice and counsel.

"Oh, they just come to talk things over," Dr. Murphy said humbly.

A visitor at his home, going up the stairs, through the first door on the right and into Dr. Murphy's study finds papers and books spread across the worktable. A few steps away stands his narrow typewriter table, a manuscript in the machine, a low rocker for a chair. His volumes of bound manuscripts cover several of the shelves that run floor to ceiling around the room.

At ease in his open shirt collar and loose jacket, this elder statesman of ornithology reflected on the future of his science. Will bird-study grow dreary when venturesome practitioners like him have discovered all the birds in the world?

"No," Dr. Murphy exclaimed. "That's the least of it. Once we find them all, we can begin to learn about them. And there's no limit to what can be learned." —THE END

## SAVING A NATURE PARADISE

*Continued from page 93*

it, feeling its rough bark and said, "What a handsome dogwood and how red the berries are."

As we walked along Columbine Ledge, she touched the tiny plants until she found the spleenwort in its cool crevice and while we lingered there she said, I feel a cool air—a current coming from above. That must be why the ferns love this spot."

In the many years that we with sight had walked this way, no one had ever seen what this wonderful person had shown us. How I wished that the well-remembered figure of Benjamin T. Fairchild in his rough boots, tweeds and big hat could have been with us that day.

Following her visit, Helen Keller wrote:

"It was an unforgettable privilege to have Mrs. Fairchild conduct Polly Thomson and me through the gardens one Keats morning of the 'golden mists and mellowing fruits' last October. A stream of extraordinary delight set my pulses dancing as I drew deep breaths of fragrance from the fallen leaves and ferns, ripening apples, goldenrod and the accumulated delicate scents lingering from last year's wildflowers.

"Out of all the enthusiastic comments I have heard and read on the Fairchild Garden I was surprised as always to find scarcely a word about the frankincense and myrrh which nature so profusely lavishes upon them. Five hundred different kinds of aromas, I am told, have been distinguished in wild plants, and certainly those gardens enfold one with a multitudinous aerial harmony of exquisite, restful odors. They send faith chiming through the mind that all is well with the world. As whiffs float around from pine, sweet briar and sweet pepper bush, one's sense of individuality is quickened. As each person differs from any other, so each flower has its own fragrance, and the miracle of creative variety goes on forever.

"Another instructive wonder of the garden as we walked from the crater through the woods was the rich world open to my hands—the tall swaying grasses, ponds asleep after long hospitality to millions of flowers and bird-folk, and curious

*Continued on page 112*

The Murphys with penguin in the field: New Zealand, 1949.





# In the Realm of the GIANT FIR

**Magnificent rain forest is only one of many landscapes in new 6,500-acre California sanctuary where, for \$125,000, a priceless heritage can be preserved for future Americans.**

By Verna R. Johnston

*Photographs by author except as otherwise noted.*

A buck broke through a thicket of huckleberries and stopped abruptly, flicking his ears and black tail. Then he bounded up the bank and out of sight down the river trail. I could see his uneven spikes long after he was gone.

The antlers were covered with soft velvet, for this was summer in the northern California Coast Range Preserve, and this Columbian black-tailed deer was drinking amid the tranquil silence of the south fork of the Eel River where it runs through the Nature Conservancy's newest western sanctuary.\*

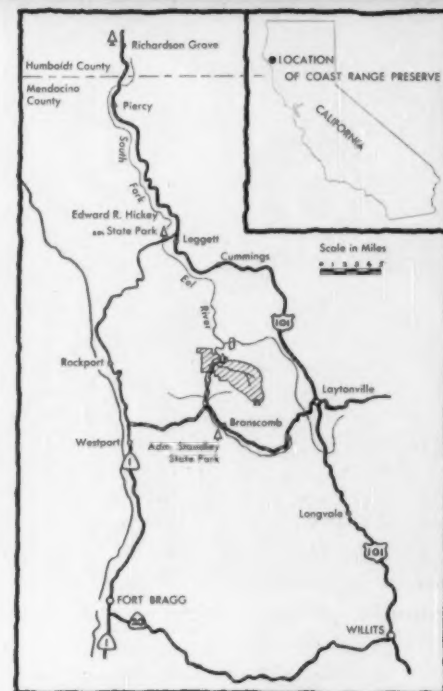
One mile back up the narrow dirt road stood the closest outpost of civilization—a large ranch style mailbox. Near it, on a weathered gate, a rustic sign read:

← Curvy madrono trees form part of higher understory of fir forest.

\* Nature Conservancy is an organization dedicated to nature and the acquisition of wild and semi-wild areas to preserve them in their natural state. Its headquarters is 4200 22nd Street, Northeast, Washington, D. C. Readers will recall "Descent to a Boreal Swamp" in *Audubon Magazine*, Sept.-Oct. 1958—a description of an eastern Nature Conservancy Project, Tannersville Bog in Pennsylvania.

"You are entering a Nature Preserve  
Notice the beauty all around  
you

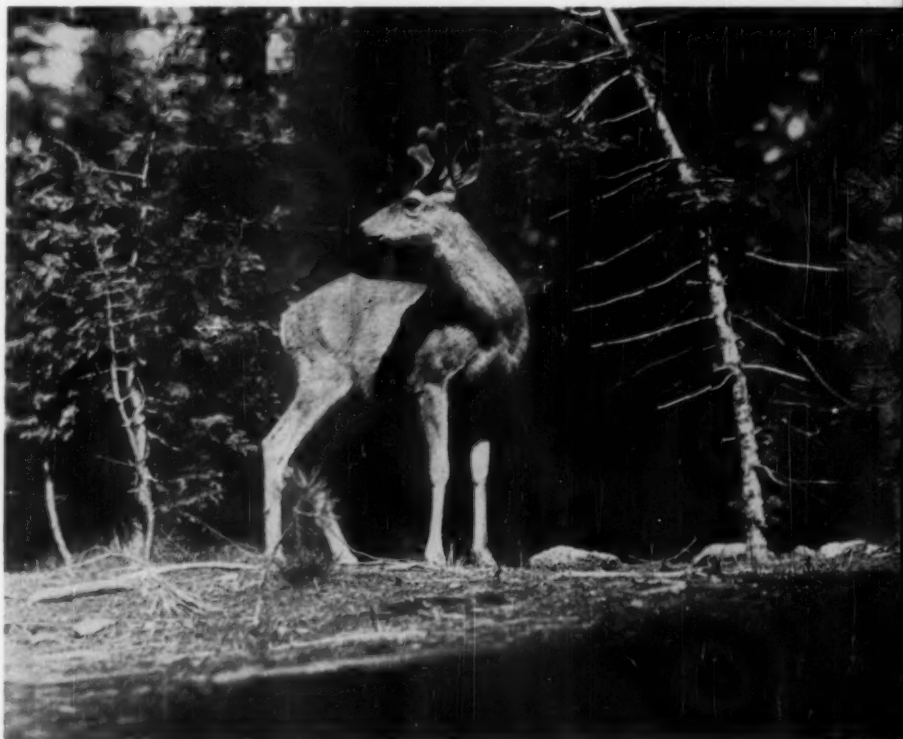
Do your part to keep it that  
way."  
On one side of the sign the road



Map and inset show location of California's Coast Range Preserve.

wound its way to Branscomb and Laytonville through hills which bore the treads of the bulldozer and the cuts of the saw—slopes once verdant with timber, now slashed and bleeding.

A black-tailed deer stood and flicked its ears.





Western dogwood, photographed by John O. Sumner



"Sword ferns form a bushy ground cover."

On the other side the short dirt road lost itself abruptly in the rampant undercover of one of the finest coastal Douglas fir forests in northern California—an unspoiled piece of native rain forest, yet only one of many landscape types in this new

sanctuary. For the Northern California Coast Range Preserve encompasses 6,500 rugged acres and a full cross-section of habitats of the region.

Foremost among them is the dense Douglas fir forest of the lowland

→  
"Within redwoods' shaded amphitheater, a hiker can let timelessness permeate the marrow."

slopes. Here stand trees up to 200 feet tall, their crowns touching to form an overhead screen which filters most of the light from the interior. Around the great black trunks of some of the firs twines poison oak tracery, stretching its crimson petioles and shiny leaflets to the light—while clinging gray lichens turn other barks hoary.

"Friendly woods where black bear imprint the moist earth."



#### THE AUTHOR

Here a one-time prairie girl sings her testimonial to the mountain forests of the Far West. Verna Johnston is that rare combination, a scientist who writes with clarity and a pen touched with poetry. Sensitive and perceptive, she reels off scientific facts wrapped in the rain-splashed foliage of forest slopes.

Nature Conservancy needs \$125,000 to purchase the 6,500-acre Northern California Coast Range Preserve. If dedicated writing will help, the goal should soon be within reach.

Miss Johnston earned her Master of Science degree in zoology at the University of Illinois. She served as ornithologist-botanist on a 16-state, University of Illinois field expedition and discovered that "magnificent mountains were waiting out west so why stay in that flat central plain?" A biology instructor at Stockton College, Stockton, California, for 14 years, she spends much of her spare time "camping out, observing wildlife and photographing it."





California forest: ▲ BEFORE the loggers . . . and AFTER. ▼



The forest floor is a botanist's dreamland of moisture-loving, shade-tolerant plants. Mosses and fungi grow everywhere—on fallen logs, decaying twigs, boulders. During the season of winter rains—from November through March—mosses spread a fresh greenness over the entire forest, aided by the evergreen huckleberries and sword ferns that form a bushy ground cover.

In April and May as the earth begins to dry out, the mosses curl and brown but a riot of redwood sorrel carpets the bottom layer with white, pink and rose blossoms. Trilliums, bleeding heart, deerfoot, Oregon grape, star flower and a long line of others join the floral parade as the season marches on, making the Douglas fir forest an ever-changing, ever-green beauty spot.

Its higher understory is made up of hardwood trees which, elsewhere on the preserve, form stands of their own. These include tanoak, the smooth-barked madrono, and canyon live oak. Each possesses unique charms.

I will never forget the July day when a gentle, steady rain caught two of us hiking in a hardwood grove high on the mountainside. Gray fog closed in quickly, cutting off visibility across the canyon, settling around and behind the trees. Everything vanished except the immediate circle of vision. The trees and the drizzle became our companions. Water trickled down orange madrono trunks in long curving streamers, darkening the grooves it caressed.

Rain, striking leaves on the forest floor, flicked opposite ends up or sent them sputtering. Live oaks arching the narrow road began to swell and drip as the mosses draping their limbs and trunks absorbed moisture. The tanoaks which seemed covered with white blossoms at a blurry distance turned out to be merely displaying fuzzy new, water-flecked leaves. Old leaves farther down the twigs shone like pieces of dark green leather polished for Sunday best.

A hillside of Woodwardia ferns followed a gurgling creek bed into the mist, some of the tall fronds holding individual drips of water that spanned three different holes in the leaflets. Clusters of newly-washed, wild California blackberries provided four o'clock tea, tangy and refresh-

ing. At several bends of the road chinquapins climbed into the overcast, tall and straight with a neat, vertically striated bark that blended gray and rose tints to a subtle pink. A hardwood forest in the rain is a world apart, and its trees are just as inviting where they furnish a tall understory for the giant Douglas firs.

Along the south fork of the Eel River, Douglas firs associate with redwoods and California laurel in

mixed stands. These are friendly woods where black bear, bobcat and raccoon tracks imprint the moist earth in the few places where it is not covered by fallen leaves of many seasons. Near the river hazel nuts hide in green-fringed paper bags, pulled in tightly above the seed but can rarely fool the sharp-eyed gray squirrels and chickadees who clean up the crop. Here, too, grows cascara with bark of cathartic usage, and



Where western flycatcher lisps. Photograph by Allan D. Cruickshank.



"Woodwardia ferns followed a creek bed."

Pacific giant salamander likes forest moisture.



Pacific dogwood, of no use at all—except to be a snowy cascade in spring, a medley of scarlet berries and multi-colored leaves in autumn, a pattern of oriental grace all winter.

In these woods feed the russet-backed thrush in summer, hermit thrushes the year around, the stolid, varied thrush in winter. Western flycatchers lisp their slim notes from summer perches while noisier olive-sided flycatchers ring out a rollicking "hic—three cheers" over the landscape. The brilliant gold and red of the western tanager adds a dash of July sun to many a leafy branch, and the rich, mellow song of the black-headed grosbeak brightens many a cool June morning.

Although California's largest redwood groves lie 50 miles north, there are several representative virgin redwood groves on the preserve, containing venerable old giants up to nine feet in diameter. Within their shaded amphitheatres a hiker can relax on a couch of flat brown needles and let timelessness permeate his marrow. There is something in the way the great ruddy-barked shafts shoot straight to the sky that imparts serenity and wonder.

Here lives a fauna of amphibians and reptiles so characteristic of the redwood belt as to carry sometimes its reddish-brown cast on some part of their bodies—though they are not all confined to this range. In or under logs or rocks, one of the west's largest salamanders, the Pacific giant salamander (*Dicamptodon ensatus*) keeps its gray and brown

*Continued on page 116*



# National Capital Report



## CONSERVATION OUTLOOK By Charles Callison

- National Resources Measures
- Goldwater at It Again
- Wilderness Bill
- Seashore and Parks Bills
- White House Council of Resource Advisers

### VITAL BILLS OFFERED IN CONGRESS

By the end of its first week the 87th Congress had a number of important proposals affecting natural resources among some 3,000 bills and resolutions that swamped the public printer.

Prominent among the conservation measures were the Wilderness Bill; several bills to create national seashore areas and other national parks; a plan for a permanent Council of Resource and Conservation Advisers to the President; legislation to protect the famous Salmon River from the dam-builders; and a bill to protect the heavily-hunted polar bear and walrus in international waters off Alaska.

### PUBLIC LANDS FIGHT IN OFFING

Senator Barry Goldwater's controversial plan to expedite transfer of federal lands to the western states and into private ownership appeared in his S.J. Res. 5. The Arizona senator took only a tentative step toward his objective, which became something of a political issue in the last campaign.

His joint resolution proposes to establish "a commission to study the non-mineral public lands laws of the United States to facilitate the enactment of a more effective, simplified, and adequate system of laws governing the transfer of title to public lands to individuals, associations, corporations, and to state and local governments. . . ."

S.J. Res. 5 was referred to the Committee on Interior and Insular Affairs. It is certain to be opposed by conservationists who have observed that state-owned lands in the West are generally more over-grazed, eroded and abused than the federal lands, and who further feel that most of the remaining public domain in the western states, largely arid, rocky or mountainous lands and gener-

ally of low value, will be best used in the long run in public ownership.

### THE WILDERNESS BILL

The Wilderness Bill, somewhat reorganized and shortened but in no way weakened from previous drafts, was introduced January 5 by Senator Clinton P. Anderson of New Mexico. Within a few days a dozen other senators had affixed their names as co-sponsors and the bill, S. 174, was referred to the Committee on Interior and Insular Affairs, of which Anderson himself is chairman.

Similar bills were introduced in the House by Reps. John F. Baldwin, California, H.R. 293; Charles E. Bennett, Florida, H.R. 299, and others. These were referred to the House Committee on Interior and Insular Affairs.

The Anderson bill, like its predecessors, would give statutory protection to the parts of national forests now designated by administrative ruling as wilderness, wild, cave or primitive areas. Primitive areas would be studied and reclassified as wilderness, with possible boundary modifications, within 15 years. Congress would be given another look at each such reclassified area.

Sizable natural areas that are free of roads and buildings in the national parks also would become parts of the wilderness system, as would suitable areas so designated by the Secretary of the Interior in national wildlife refuges.

The bill would make it the policy of Congress "to secure for the American people of present and future generations the benefits of an enduring resource of wilderness." It would define wilderness, in order to assure future consistency in standards and policy, as:

"... an area where the earth and its community of life are untrammelled by man,

where man is a visitor who does not remain . . . (an area) without permanent improvements or human habitation . . . of sufficient size to make practicable its preservation and use in an unimpaired condition . . . (and which) has outstanding opportunities for solitude or a primitive and unconfined type of outdoor recreation . . . (or) ecological, geological, or other features of scientific, educational, scenic or historical value."

The bill would not "lock up for all time" the material resources—the timber, minerals and water—as certain opposing groups have argued. Instead the bill sets up an orderly procedure for additions, deletions, or changes in the wilderness system, with provision for due notice, public hearings, and review by Congress. Congress itself could, at any time, pass a law abolishing or changing any wilderness area. The President, if a national emergency dictated it, could by specific language in the bill, authorize mining, mineral development or reservoir construction in a wilderness area. Thus the whole public interest is safeguarded.

#### SEASHORE AREA LEGISLATION DRAFTED

Bills to establish national seashore areas under the National Park Service, all referred to the Interior and Insular Affairs Committee of either House or Senate, are pending as follows:

Cape Cod National Seashore Park, H.R. 66, by Rep. Edward P. Boland, Massachusetts; similar bills by other Massachusetts representatives.

Padre Island National Seashore, S. 4, by Senator Ralph Yarborough, Texas.

Point Reyes National Seashore Park, H.R. 2775, by Rep. Clem Miller, California.

The office of Senator Maurine Neuberger, Oregon, revealed she is drafting a bill to establish an Oregon Dunes National Seashore area. It probably will have been introduced by the time this issue of Audubon Magazine reaches you. The Oregon Dunes proposal was pushed in the last Congress by Senator Richard L. Neuberger, late husband of the present senator, and after his death some colleagues said the area, when established, ought to be known as the "Neuberger National Seashore Park." The U.S. Forest Service has taken a stand against this bill because certain lands now in a national forest would be transferred to the Park Service.

#### OTHER NATIONAL PARK BILLS

Chesapeake & Ohio Canal Historical Park bills, H.R. 2047 and S. 77 were introduced by Rep. Charles Mathias, Jr., and Senator J. Glenn Beall, Maryland. Some 4,800 acres al-

ready owned by the Park Service along the canal, which parallels the Potomac, became a National Monument through one of President Eisenhower's last official proclamations. The park bills would authorize acquisition of additional lands.

A Prairie National Park in Kansas is recommended in S. 73, by Kansas Senators Andrew F. Schoepel and Frank Carlson. An area of unplowed grassland in Pottawatomie County has been under study.

A North Cascades National Park in Washington, proposed in H.R. 2056, by Rep. Thomas M. Pelly of that state, will have tough sledding because of the dedicated opposition of the Forest Service and the timber industry. If established, this park would be converted from a national forest.

A Great Salt Lake National Park is the goal of S. 25, by Senator Frank E. Moss of Utah, who found in a public hearing last fall there are many problems standing in the way, including serious pollution by municipal sewage in the area proposed as a park.

Senator Moss has introduced another measure, S. 175, that will cause conservationists to do a lot of soul searching and head scratching. It would repeal the language in the Colorado Storage Project Act that requires the Secretary of Interior to protect Rainbow Bridge National Monument from the rising waters of Glen Canyon Reservoir. The Utah Senator says, and quotes new Secretary of the Interior Stewart Udall as one authority, that the extra dams and canals needed to keep reservoir waters out of the monument would do more damage than the water to the scenic values.

Senators Henry M. Jackson and Warren G. Magnuson, of Washington, in S. J. Res. 13, have revived a controversial proposal to build a resort-type hotel to exploit skiing in Mount Rainier National Park. The Park Service has long resisted this plan as the kind of development that is out of place in a national park.

#### SIGNIFICANT MEASURES

The bill to create a Council of Resource and Conservation Advisers attached to the White House, first introduced last year by Montana Senator James E. Murray, since retired, has been reintroduced by Senator Clair Engle of California and 30 co-sponsors. Engle cited a campaign speech by President Kennedy recommending such a council. Numbered S. 239, the measure was referred to the Committee on Interior and Insular Affairs.

Senator Frank Church of Idaho is author and Senators Neuberger and Engle are co-sponsors of a bill to prohibit the construction of dams on the Salmon River, which would be designated a spawning sanctuary for anad-

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# Let's Visit the Ruffed Grouse

Little more than a hollow in the  
ground, its nest is difficult to find

By Henry Marion Hall

The drumming of the ruffed grouse is a true call of the wild. It gives voice to hemlock groves, brushy hillsides, and to savage alder runs. Heard occasionally at all seasons, it is primarily a spring call, just as the bark of the red fox is a winter one.

No other sound paints such pictures on the mind. At the first "Thump! Thump! Ka-thump!" rapidly accelerating into a feathered burst of sound, we see the bold bird, strutting on his favorite log, head thrown back, russet crest cocked, and

dark ruff glistening with iridescence. His tail is fanned, displaying the handsome, dark, terminal band, while his stout wings beat the air with infinite rapidity. They quicken to a blur almost like propellers, yet do not move his body an inch, producing a sound somewhat like the swelling exhaust of a motor.

The drumming is a love call to summon females and to challenge any males within hearing. It expresses an exuberance and determination difficult to analyze, being perhaps the most insistent come-hither sound in nature.

Hearing a cock grouse sounding



Ruffed grouse booming. A rare picture  
by Elsa and Henry Potter.

Female blends with foliage in portrait by Roger Tory Peterson.



off in a Connecticut forest once led a friend and me to scrutinize the terrain with considerable care. In addition to the surrounding stand of conifers, less than 100 acres, there were a string of black ponds, an alder swamp, and a hardwood belt bordered by weedy fallows. Here and there runlets trickled from higher land through ferny creases, and the whole section showed a pleasing variety of contours such as grouse like to haunt.

There was plenty of grouse provender everywhere, scarlet winter-green berries under the ground pine, tangles of bittersweet or greenbrier, nannyberry bushes, thornapples, blueberries, huckleberries, wild red raspberries, staghorn sumac holding up red candles here and there, and an abandoned apple orchard where windfalls reddened the moss. We noted occasional knee-high ant hills with scratches on the sides showing where grouse had snatched their most medicinal food. No grouse could possibly starve amid such abundance. We saw half a dozen, and concluded that it might be feasible to find a nest, most fascinating of all forest mysteries.

Under a gnarled apple tree, amid some briars, we spotted a former nesting site, a mere hollow perhaps a foot in diameter, strewn with broken eggshells. There were a dozen, each so neatly split open by a chick's milktooth as to fall into symmetrical halves. We picked them up and my companion later glued them together with wisps of surgeon's plaster. Just why the fragments had not been nibbled by white-footed mice was not clear, but as it was already late in May, the eggs may have been laid earlier that same season.

One peculiarity distinguished the nesting site. The bird had hatched

her young on a flat from which a pathway through undergrowth and saplings offered her immediate escape to open land less than 70 yards away. Grouse nesting in the hem of a forest always have exits near at hand.

While reconnoitering the terrain around the first nest, I soon flushed a mother grouse from her home in the red pine needles. She did not rise until my foot came down within a few feet of her, and roared away through another avenue of escape. A dozen buffy eggs, slightly smaller than a bantam's and a trifle pointed, filled the cup to the brim, or nearly so. The hollow looked narrower than the older one, and the eggs had been deposited in layers.

This grouse was a good mother, however, and as our later observations disclosed, deftly managed, by turning them, to hatch every one. The only cover close to this nest was the branches of a white pine directly overhead, but fully ten feet up. Nevertheless, the back of the brooding bird matched surroundings so perfectly that we might never have spotted her if she had not moved. As this egg-filled cup was only a few feet from the other, we concluded that the same grouse may have made both of them. The eggs at both sites, at any rate, were identical in size and color. Some grouse eggs are fully ovate and faintly pinkish while others, usually unmarked, show a few faint speckles around the larger ends.

Returning there a year later, we flushed a prime grouse from the base of a paper birch nearer the hem of the woodland, but only a few feet from the pine-needle nest. The bird had made a nesting hollow in a tussock at the base of the tree, from which she had fled down a forest corridor similar to the others observed. This nest contained 13 eggs almost identical to those in the first set.

As nobody ever guns in the region, which lies far from the main pikes, the ruffed grouse population thereabouts is increasing notably. Ecologically, some 500 acres of this Connecticut terrain are in proper condition to produce a fair and continuing population of ruffed grouse. Some farming is carried on but not too intensively. The boundaries are old stone walls with a few rail fences along which grouse cover and grouse



New-born ruffed grouse are greeted by camera of Karl Maslowski. For a grouse this is an elaborate nest.

feed sprout from seeds dropped by the birds. Springs abound, and on the higher knobs and hills there is plenty of heavy cover for storm-shelter and winter refuges.

The small lakes are spring-fed and icy cold, and it is to be hoped that some enterprising game warden does not have them stocked with trout. This would be fatal for grouse. Fishermen would swarm into this lovely oasis and some of them would return in late fall and start gunning the ruffed grouse.

These superb birds are a wonderful crop for a small stretch of land to produce. They survive there because they have found a bit of un-

*Continued on page 120*

A grouse chick like this one, photographed by Leonard Lee Rue, III, captivated author.



### The Author

Dr. Henry Marion Hall has been a frequent contributor to *Audubon Magazine* for many years. He is the author of several books on birds and ranges far afield both in this country and abroad from his home in Newport, Rhode Island to gather his material. A steady winter migrant to Florida and Nassau, he is an ardent repeat visitor on the Audubon Wildlife Tours in South Florida.



# BIRD FINDING

with

*Sewall Pettingill*



**WHERE TO GO • WHEN TO GO • WHAT TO SEE**

## *In Michigan's Dead Stream Swamp*

FOR an unusual opportunity to get close-up views of nesting ospreys and various marshbirds, visit the Dead Stream Swamp in Lower Michigan and let Wade Miller take you out in his airboat. You'll have the thrill of your life.

I know of no place with quite the same combination of nesting birds in a relatively small area, and no other place north of Florida where you can be carried to the birds in quite the same way.

Dead Stream Swamp is the result of intentional flooding in 1941 by the construction of the Reedsburg Dam across the Muskegon River. The objective of this project, sponsored by the Game Division of Michigan's Department of Conservation, was to create a large, stable, aquatic habitat for wildlife, particularly waterfowl and muskrats. The present impoundment covers about 2,000 acres, but probably affects the drainage of at least 6,000 acres more. Besides achieving its principal objective, the project has proven to be an enormous benefit to many non-

game birds—as any visitor will readily discover.

The swamp has a grim aspect owing to the countless dead stubs of trees killed by inundation. Nevertheless, it is these stubs, surrounded by water, that account for the presence of eight pairs of ospreys, a dozen or more pairs of great blue herons, and unestimated pairs of tree swallows which use them as nesting sites. In the years since 1941, cattails, bulrushes, sedges, and other marsh-loving plants have developed lush mats over all but the river's original channel and a few other deep places. Thus ample cover has come into being for such breeding birds as pied-billed grebes, least bitterns, mallards, black ducks, king and Virginia rails, soras, common gallinules, American coots, black terns, long-billed marsh wrens, red-winged blackbirds and swamp sparrows.

A few years ago Wade Miller acquired the use of Michelson Landing—a point of land (site of the old lumbering town of Michelson) ex-

tending into the swamp, and began renting boats to fishermen and duck hunters. From his winter quarters in Florida he brought a couple of airboats—the type used for trips over the Everglades—to attract thrill-seeking visitors wanting merely exciting rides over the marsh. To his astonishment, Wade soon discovered that his ordinary boats were being rented by people desiring to see and photograph birds.

Realizing that the birdlife alone was proving to be a good business attraction, Wade cleared the way through fallen trees and submerged logs to the edge of an osprey nest that was only four feet above the water and, using his airboats, spotted nests of bitterns, terns, gallinules, etc. He soon had a tour to show more than just birds on the move or perching in the distance. Before long, he began taking a personal interest in the birds and became increasingly familiar with their habits and welfare. To build up the population of wood ducks, a few pairs of which were nesting in dead stubs, he erected nest boxes suited to their requirements.

In the summer of 1960, as in three previous summers, I visited Dead Stream Swamp with my advanced class in ornithology at the University of Michigan Biological Station. We arrived at Michelson Landing late in the evening, engaged our boats, and camped out not far away.

Early the next day we cruised the marsh on our own to observe as many different kinds of birds as possible and to gain familiarity with their calls, songs, behavior and ecological preferences. During our exploration, we rowed to the low osprey nest (mentioned above), a huge affair precariously balanced on a stump, and looked in on the one young bird, nearly full grown, cowering in the bottom. High on neighboring stubs both parent birds protested, though rather diffidently—they were used to visitors.

About 10 feet from the nest a platform had been built from which we could more easily look into the nest and take pictures. (A few photographers, we were told, had put a blind on the platform and, waiting patiently in it, managed to obtain good shots of the adult birds attending the nest and young.) Each year that I have visited the swamp this conveniently low nest has been oc-

cupied, probably by the same pair, and the young have been reared successfully, despite human attentions. The nests of the seven other pairs of ospreys are in different places elsewhere in the swamp. Much higher on stubs, they are consequently not as accessible, although no less conspicuous.

Not far from the low osprey nest we saw several nests of great blue herons among the upper branches of the tallest dead trees. Simple platforms of loosely placed sticks, they seemed ridiculously small and inadequate for the fully-grown young birds standing or crouching in them. Noting their great distance from the ground and the decadent condition of the supporting trees, we marvel that, two weeks before our visit, Walter P. Nickell from Cranbrook Institute of Science, Bloomfield Hills, Michigan, had succeeded with specially constructed aluminum ladders to reach these nests and band the young.

By mid-morning, when it had become quite warm and the birds were less active, we returned to Michelson Landing and in no time were literally skimming the marsh in Wade's larger airboat, sailing through cattails and over floating logs with never as much as a jolt or bounce. It was the next thing to flying. Though you would think that the deafening roar of the boat's airplane motor might frighten the wits out of every bird in its path, the astonishing fact is that the airboat alarms

a marshbird no more than a moving car disturbs a bird along the highway. Its effect on a nesting bird is no less than remarkable. Roaring up to a nest and stopping abruptly, its motor killed, the airboat seems to take the attending bird by storm, to overwhelm it before it has time to be frightened. The result is that the bird sometimes stays on the nest, or soon gets off slowly and stands for a while in the surrounding cover.

Wade's tour was well planned and executed. First, we flew up to within arm's reach of a black tern on a nest. Just as we stopped, the bird took to the air and "dive-bombed" us several times, but soon settled on the nest unconcernedly. Wade said that when he had been at the nest alone, the bird, instead of dive-bombing, had alighted on his head and simply protested vocally. Next, after another flight, we found ourselves beside a least bittern's nest deep in the cattails; the female was sitting on it, motionless. Reaching from the boat, Wade lifted her up to show us her eggs. When he released her, she squatted on them to continue incubation.

As the tour went on, we saw nests of common gallinules and came alongside a gallinule family, the chicks about a week old. We peered into a coot's nest and surprised several broods of black ducks. Whenever we stopped at nests, Wade encouraged us to take all the pictures we wanted. His boat, flat-bottomed



Dive-bombing black tern photographed by John H. Gerard.

and broad of beam, was suitably steady. With the birds close up and behaving in an undisturbed manner, one could not ask for a better setup, either for still or motion-picture photography.

The Dead Stream Swamp lies west of Houghton Lake in north-central Lower Michigan and is reached from US Route 27 midway between Harrison and Grayling. If you are coming north from Harrison on Route 27, turn left on County Route 300, 2.5 miles north of the intersection with State Route 55, and follow directional signs to Michelson's Landing, 1.3 miles distant. If you are coming south from Grayling on Route 27, turn right on County Route 300, which leaves Route 27 at a point 21.5 miles south of Grayling. There are many motels and restaurants in the vicinity of Houghton Lake.

The first of June to mid-July is the best time to see nesting birds in Dead Stream Swamp. However, young ospreys do not leave their nests until August and there are usually late nests of terns and gallinules, so you can be sure of a rewarding visit, if you come after mid-July. Wade Miller's charges for a bird-nest tour in his airboat are \$2.00 per person.

In concluding, I want to thank Dr. William B. Robertson, Jr., Field Research Biologist with the National Park Service, for checking my column on Everglades National Park in the January-February 1961 issue and for his helpful advice and suggestions prior to our visit to the park.

I recommend his handsomely illustrated booklet, *Everglades—The Park Story* (1959, University of Miami Press, Coral Gables 45, Florida). It is a well-written, informative introduction to the park's natural history.

—THE END

Visit to osprey nest is photographed by the author.



## SAVING A NATURE PARADISE

Continued from page 99

rock formation. The autumn colorings did not brighten for me, nor did bird-wings flash, it is true, but the elms, the noble tulip tree with its fiddle-shaped leaves and the rough-barked hickory trees were eloquent to my touch. Farther on an immense cliff bristling with big cedars in the boulder section imparted to me a sense of indomitable life

rending away obstacles. I could not reach their higher boughs, but they were dominant in my mind because they suggested soul-wings that drew me out of the roots of dark silence.

"With artistic perceptiveness, Mrs. Fairchild crowded as many tangible aspects of the landscape as she could into my finger-tips, not forgetting what seemed cool mist rounded into berries suspended on trees or trickling into mossy hollows. As we

moved from one enchanting nook to the next my satisfaction was enhanced by the unpredictable caprices of verdure, rock and tree grouping. Grounds formally laid out, however elegant, have ever irked me with a feeling of prescribed mapped-out life. Emerson's lines recurred to me with new meaning:

'Nothing is quite beautiful alone,  
Nothing but is beautiful in the whole.'

## THE PRESIDENT REPORTS TO YOU—Continued from page 95

### A Political Handout, a Waste and a Fraud

A recent letter from Alaska inquiring about the bounty system of "controlling" predators reminds us that this method of fooling the public and throwing money away is still being used in more than half the states in this modern nation.

The bounty system has been debunked and demolished by biological research and logic so many times that intelligent people are inclined to dismiss it from mind. But like other political give-aways, it dies a hard death. That is exactly what it is, a give-away that uninformed legislators are pleased to hand out to a certain group of hunters who like to kill hawks, owls, foxes and certain other furbearers, and who think it just ducky to get paid money for enjoying their sport.

Biologists in the state conservation departments compile and publish facts that prove the payment of bounties does not reduce predator populations, does not make more game for the hunter, does not eliminate the occasional raids on the poultry pens, and is, in fact, pouring money down a rathole. But the bounty hunters scream for their annual handout, get their pictures in the paper as big heroes for bringing down a "chicken hawk," its buteo wings outstretched for the photographer. The politicians, counting votes for the next election, fall for the gag. It happened only last year in Wisconsin, a state supposed to be enlightened in conservation matters, when the legislature voted new bounties on foxes, bobcats and wolves.

Too often the organized sportsmen, who call their groups "conservation clubs," are misled perpetrators and parties to the hoax. This is the case in Pennsylvania where the game commission is authorized by state law to hand out money for dead foxes, bobcats, weasels and "goshawks or other predatory birds," and where presently bounties are being paid on foxes and great horned owls. I have in my hand as I write this a newspaper clipping in which the Somerset County Sportsmen's League is credited with having done great things for conservation because, from 1955 to 1960, its members "killed 3,486 crows, 97 great horned owls, 295 unprotected hawks, 861 foxes, 331 weasels, 2,074 opossums, 1,138 skunks, 753 raccoons, 1,430 water snakes, 297 blacksnakes, 49 rattlesnakes, 38 copperheads and 52 waterdogs."

The Pennsylvania Federation of Sportsmen's Clubs, which has to its credit the cleaning up of polluted streams and other solid conservation achievements, surely must be red-faced about it.

As long ago as 1933 the late Dr. T. Gilbert Pearson,

then president of the National Audubon Society, delivered a speech to the International Association of Game, Fish and Conservation Commissioners on "*Evils That Lurk in the Bounty System*." Dr. Pearson's conclusions were correct years before they were confirmed by scientific investigation in many states. This Society stands opposed to the bounty system for three basic, irrefutable reasons:

1. *It doesn't work.* The purpose of the system, if it has a purpose, must be to reduce the number of animals of a given species and thereby to lessen the alleged "damages" caused by that species. Roger Latham, biologist-writer of the *Pittsburgh Press*, has noted that even though a \$4 bounty has been paid on from 30,000 to 50,000 foxes annually in Pennsylvania during the past 15 years, foxes were never more abundant. In his classic study (1956) of the *Red Foxes of Michigan*, State Biologist David A. Arnold pointed out that while bounties were being distributed in record amounts from 1947 through 1953, the fox population was rising concurrently to an all-time high. The same thing happened in other states handing out fox bounties and the increases were no greater in states that did not indulge in this manner of wasting money.

2. *The bounty system is inefficient, subject to abuses and fraud.* It puts "control" in the hands of the uninformed; first any Tom, Dick or Harry who can shoot a gun, and next in the hands of local officials who may not know an owl or hawk from a Rhode Island Red pullet, or a coyote whelp from a collie pup. Dead animals are taken across state or county lines from places where bounties are not offered, to places where they are paid. All sorts of shenanigans occur. Arnold showed how a hunter could collect a bounty in Michigan, get the dead animal's right ear punched, and then take the feet into Ohio and collect another bounty.

3. *Bounties perform an educational disservice to the public.* The system is, indeed, the antithesis of ecological wisdom. It fosters the mistaken idea that certain animals are by nature *bad*: they must be *bad*, because the law puts a price on their head. That is why the Somerset County sportsmen awarded themselves hero medals for killing 3,486 crows, 97 owls, 295 hawks, 861 foxes, etc.

Any reputable ecologist or wildlife biologist—any recognized school of conservation—will tell you that no living thing in nature is bad *per se*, that each plant and animal links to many others in the chain of life. Man, for all his scientific achievements, cannot as yet assume the wisdom to say that any animal or group of animals should be eliminated from the face of the earth.

and they defined the fascination that enmeshes the Fairchild Garden. My hands rejoiced in the happy vagaries of those sylvan acres, held in check just enough to let each part radiate its own glory and heightened the effects of an ever-changing whole. Like love and goodness, beauty cannot be compassed by a yardstick or a formula; for it is a law unto itself."

There is an ageless quality about

### FOR WILDLIFE AND WILDFLOWERS

"A sanctuary for wildlife" as well as a wildflower wonderland is the way John H. Baker, then President of the National Audubon Society, described the Fairchild Connecticut Garden in 1945 at the time of its acceptance by the Society from the garden's trustees.

"Miles of road and paths wind through the garden, also notable for its geological formations, rock ledges, glacial boulders and its beautiful pond," Mr. Baker wrote in *Audubon Magazine* for July-August 1945.

"The garden has now been controlled for fifty years so that, for example, turtlehead, blue and red gentian, cardinal flowers, maidenhair fern and the rare orchids and trilliums have been regarded as jewels, and allowed to grow as nature intended," he wrote. "The rock pink blooms on the rock ledges, as it did when the Indians were there, and the little streams are full of the yellow cowslips in the spring."

"The Educational Director of the Audubon Center of Greenwich is greatly impressed with the unique value of the garden for nature teaching purposes, as there is great diversity of habitat, including numerous stands of coniferous trees. There is an open marshy area at one end of the property, and wintering birds tend to concentrate in the sheltered valley around the turtle pond, protected by its surrounding cliff, and well supplied with winter food."

"The inclusion of the garden in the Audubon Nature Center project now presents to people of the nearby metropolitan district the largest wildlife sanctuary readily available to them—a 400-acre wildlife sanctuary and nature center, where people can easily observe native plants and animals and avail themselves of the professional guidance offered by your Society. . . ."

Ben Fairchild and his garden. To a visitor it is different, its paths lead the imagination down to the bend and on again. Its founder's philosophy was simply expressed:

*Let the fold of the land be your guide, accentuate the vista you seek, make use of the native plants, never ignore the little things and above all save the fields and woodlands for the future.*

At Ben Fairchild's death in 1939 at the age of 88, his nephew, B. Tappen Fairchild, inherited the garden. Tappen hoped that he could maintain it as his uncle had done and keep it in the family but in the changing world of 1940's this didn't seem possible. One thing was certain—Tappen would never cut it up into small parcels. It was his uncle's life work, his vision and his alone, and it must remain intact.

There were many problems and after consultation with friends, it was incorporated in Connecticut in 1943 as a tax-exempt educational corporation. Twelve trustees were elected and they assumed the responsibility of its future while Tappen continued to pay the upkeep. They were distinguished men, each bringing to the garden his own special contribution:

Chancellor Henry Woodburn Chase, Dr. Elmer Drew Merrill, Dr. C. Stuart Gager, Dr. Robert Cushman Murphy, B. Tappen Fairchild, Wilber M. Peck, Percy H. Jennings, treasurer, Dr. Frederick Pough, Thomas H. McInerney, Percy S. Straus, Thomas J. Watson.

Soon afterward, the National Audubon Society received a valuable gift of land and funds from a friend and neighbor, Mrs. Eleanor Steele Reese. She had been one of the Fairchild Garden's first friends and had encouraged Tappen in his plan. Her gift encouraged the trustees of the garden to offer it to the Society and Mr. John H. Baker, its President, joined wholeheartedly in the idea.

"Mrs. Elon Huntington Hooker, another good friend, agreed, at the request of Mrs. Francis B. Crowningshield, a director of the Society, to head a committee to raise the \$25,000 necessary to pay off the mortgage. She also underwrote for several years the salary of the guardian, Leonard J. Bradley, outstanding botanist and interpretive representative of the Society.

These were generous and cooperative efforts. Without them and the generosity of B. Tappen Fairchild, the garden would have been lost forever. It still lives, ready to rejoice the souls of countless visitors yet unborn.

—THE END\*

\* See account of acquisition of Fairchild Connecticut Garden by National Audubon Society in "The President Reports to You," July-August 1945 issue of *Audubon Magazine*, pp. 243-235.—The Editor

### A TRIBUTE TO THE FAIRCHILDS

By Duryea Morton, Director

Audubon Center of Connecticut

We are fortunate to have as part of the Audubon Center of Connecticut the 127 acres that comprise the Audubon Wildflower Garden. Little did Benjamin Fairchild know when he developed his lovely, wild garden that it would bring so much pleasure and contentment to so many people. During the fall, when the trees take on their brilliant hues, and again during the spring when the warm days cause the early blooming flowers to cover the ground with delicate color, Mr. Leonard J. Bradley, our botanist, has noted visitors by the thousand.

From September to June it is our pleasure to conduct nature tours there for study groups. Because the garden has such a wide variety of habitat and plant life we utilize this section of our property as much as possible. Here we discover many exciting and interesting creatures which are drawn to the area because they find the proper living conditions.

Beginning in June and lasting to September, teachers and other youth leaders from all parts of the United States take regular trips to the wildflower garden. Of course, the highlight of any visit to the garden is the opportunity to work with Mr. Bradley as he discusses the tremendous variety of plant life that grows along the trails.

The service rendered by Mr. Benjamin Fairchild and his nephew, B. Tappen Fairchild, to those who come to the Audubon Wildflower Garden to study, to find peace and tranquility and to rejuvenate their spirits in its wide beauty, is incalculable. We on the staff of the Audubon Center thank them for their gift which has added so much to the lives of the children, Audubon campers, youth leaders and parents who visit the center.



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## ATTRACTING BIRDS TO YOUR GARDEN *Sanctuary*

### An 11-Acre Bird Feeder

By Bennie Dahl

WE devote 11 acres to bird-feeding, a pleasant hobby which we have followed for 20 years at our home in Pontiac, Michigan. In addition to buying a great deal of sunflower seed, we plant it in nine rows about 80 feet long. The seed is mostly devoured by red-winged blackbirds returning from their molt prior to their southern migration. The cardinals and chickadees have their fill while they last; after that we buy our winter supply.

The visiting species that we have catalogued run into the hundreds. Many stop only in course of migration. Each year we plant about a quarter-acre of corn to feed pheasants and jays. The red-winged blackbirds do get some of it, but the time for their migration is at hand so they do not ravage it a great deal. We use some wild bird seed, sunflower seeds and the corn in the fields, but chick scratch, medium and coarse, is the main feed.

We have our suet feeders to supplement the grains and I've seen some of the birds indulge in that, too. Besides feeding, we have a housing program—about 50 houses in all. In the summer the place is teeming with birds. The houses are for tree swallows, bluebirds, wrens and martins especially. One year we had a screech owl in the flicker house after the former left.

Last spring was a very unfavorable

season for birdhouse nesting. The birds started to build but a cold snap came along and most of them seemed to disappear for some time. About half of them returned.

The martins were a mystery to me. I had three martin houses, all used in former years, painted and sprayed as usual, but not a single nest developed. The martins were late and arrived in very small numbers. Once there were six females to one male. I don't believe I saw over three males at one time, as the females greatly outnumbered the males. These houses had been filled, for the most part, in previous years. I'm still trying to figure out the cause of it.

Each house has room for six pairs and they were in the same spot as in former years. After hatching time there were flocks of them around the house, but males were still scarce. There is nothing as amusing as a purple martin and I did miss them.

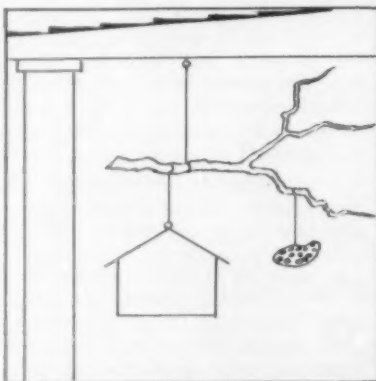
A few years back in the dead of winter we were pleasantly surprised by a flock of evening grosbeaks. Their bright plumage, with snow as background, was a welcome sight. There were at least 65 in all. After staying a while they thinned down to 35 and a few stayed till early spring. Thus, the sunflower budget had to be increased as these birds with their broad, strong beaks deplete the seeds in a hurry.

Incidentally, we have seen occasional Oregon juncos here for several winters.

### Try This for Fun

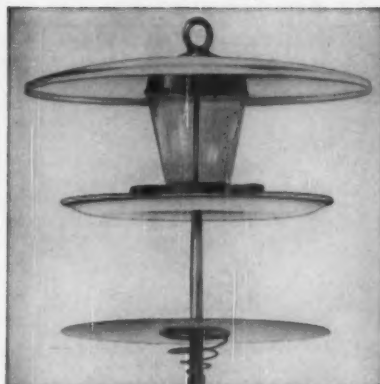
Many of my young married friends have bought homes in new developments where there are no trees. They lament the fact that they are unable to have bird feeding stations that birds can enjoy. Actually, with a little ingenuity and some wire a feeder can be suspended from your roof, overhang or porch ceiling. A pole-supported feeder often foils squirrels and cats, and some people even have luck with feeding tables.

But a tree limb is highly desirable and my little sketch shows how you can hang a feeder from a tree limb without any trees. The support may be fastened to a wall, a window casing, or eave. The



A feeder for treeless home owners, designed by Frances Schiponi.

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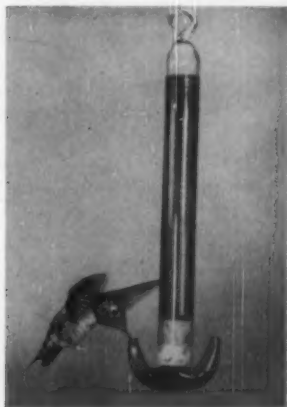
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branch is sturdy and heavy enough so that it does not sway too much in the wind. The drop from the support may be rigid—a metal rod or a heavy coiled spring or a stout cord. The same may be used for the drops to the feeding tray whose wide overhang roof protects the food from rain and snow.

Bind pieces of suet to the branch with a loosely woven cord. The birds may use the cord later for nest-building. Knotholes and scooped-out hollows can be filled with bacon fat or peanut butter.

I have noticed that many birds prefer pumpkin and squash seeds dried at canning time. They eat quarts of these seeds during the winter along with oats, wheat, bran, boiled chestnuts and uncooked cereals.

To attract birds to a new feeding station, add caraway seed, poppy seed and, a must, anise seed. The smell of the anise seed carries far and brings in more birds. Cut windows in dried gourds, stuff with cotton wool and hair combs, together with strands of wool. These will encourage the birds to nest nearby.

As I approach 70, I welcome my bird family each season with increasing interest and a growing appreciation of the happy excitement they bring to my quiet days. Have you had the delightful experience of observing children's faces as they watch birds feeding just outside the window? Try a feeding station for fun.

FRANCES SCHIPONI

Schoharie, New York

## 28 Species on One Feeder

During the past feeding season I was impressed with the considerable variety of birds either feeding on, or attracted to, the feeders by the presence of other birds.

I have seen no bird count figures concerning the species which come to feeders, though undoubtedly many people have kept such records, so, to determine how many types would be attracted to feeders in my immediate area, I decided to keep such a record for the 1959-1960 season. The record is as follows:

Blue jay, Carolina chickadee, crow, yellow-shafted flicker, evening grosbeak, purple finch, goldfinch, sharp-shinned hawk, slate-colored junco, mockingbird, quail, robin, house sparrow, chipping sparrow, field sparrow, tree sparrow, song sparrow, white-crowned sparrow, white-throated sparrow, starling, loggerhead shrike, tufted titmouse, rufous-sided towhee, cedar waxwing, downy woodpecker, hairy woodpecker, turkey vulture, black vulture.

The last two were circling above the feeders but did not land. The sharp-shinned hawk made a number of forays attempting to catch some of the smaller

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## VALLEY BIRD SHOPPE

Box 9472, Selon, Ohio

feeding birds. The cedar waxwings roosted in the tree above the feeders on numerous occasions, but were not seen feeding.

In addition to the 28 species that I observed, there were no doubt others that visited the feeders while I was at work.

The total consumption of bird food was 100 pounds of sunflower seed, 200 pounds of intermediate chicken scratch feed, 20 pounds of suet.

I would be very much interested in learning the experiences of other people with feeding stations concerning the variety of species attracted to their feeders each season.

RICHARD R. ALMY

Front Royal, Virginia

## IN THE REALM OF THE GIANT FUR—Continued from page 105

mottled skin comfortably moist and issues at times a strange barking call.

Near streams several species of newts (*Taricha sp.*) peer about with protruding eyes and carry their bright orange underparts rapidly over the spongy needles in wet weather. Tiniest of all is the California slender salamander (*Batrachoseps attenuatus*), a minute little creature with less than two inches of head and body length, thin as a pencil and with legs so slim as to appear non-existent at first glance. His black form is usually uncovered among leaf mold or under forest debris.

In the same debris the unusual rubber snake (*Charina bottae*) may be burrowing. This interesting reptile is a harmless, one-to-two foot brown snake whose two extremities look so much alike that it is difficult to tell head from tail. The snake adds to the confusion by sometimes wiggling the tail as if it were a head. *Charina* feeds mainly on worms and insect larvae in the leaf mold, is secretive by nature and one of the most unique creatures of the coastal region. Its habits are little known and deserving of study.

Actually the preserve is full of natural history conundrums—questions which ecologists would like to try to answer if they had a place such as this in which to carry out the necessary long-range studies.

The Northern California Coast Range Preserve is ecologically a part of the Pacific Coast Moist Coniferous Forest Biome. A biome refers to all the plants and animals associated as a unit in a region. This biome in-

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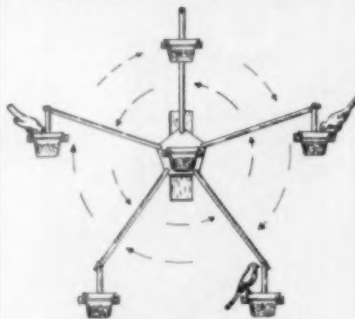
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cludes a coastal strip of land from central California north into Alaska, distinguished from other biomes (such as prairie and deciduous forest) by high humidity, rainfall ranging from 30 to 150 inches, heavy fog and the dominance of coniferous trees. The abundant moisture and well-developed understory are indicated in the commonly-used name—temperate rain forest.

Although the rain forest of the Coast Range Preserve shares many species of plants and animals in common with the wetter rain forests of Washington and Oregon, it shows some conspicuous differences. The western hemlocks and western red cedars of the more northerly forests are largely replaced by redwoods in California. And the Douglas fir, a dominant tree in both areas, apparently assumes a variable role in the succession of the forest, depending on moisture, coolness and perhaps other unknown factors.

Thornton Munger of the Pacific Northwest Forest Experiment Station in Portland, Oregon, concluded a detailed study of succession in northwestern Douglas fir forests with

these comments: "Douglas fir, the predominant tree in southern British Columbia, western Washington, and Oregon, is not the climax\* species. It is a light-requiring, aggressive tree that forms pure, even-aged stands after fire or logging but does not reproduce in its own shade. In the absence of fire or clear-cut logging, western hemlock and other shade-tolerant trees reproduce in the shelter of the virgin trees and ulti-

Turn to next page

\* The climax species represents the culminating stage of possible vegetation.

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mately supplant Douglas fir if present."\*

Munger describes how, during the first century of a Douglas fir forest's growth in the northwest, hemlocks, western red cedars and balsam firs gradually make their appearance in the understory. After 300 years, these shade-thriving invaders may outnumber the Douglas firs which are now mature and succumbing one by one to casualties. No young Douglasses take their place, for the Douglas seedlings cannot stand the shade. By 500 years only a few senile Douglas firs remain in a hemlock-cedar-fir forest.

This is the pattern in most of the wetter northwest, but it is far from a black-and-white rule. In the drier valley and foothill lands of western Oregon, Douglas firs sometimes replace themselves as old Douglasses die, or broad-leaf shrubs may take possession temporarily. The climax here may be an uneven-aged stand in which Douglas fir predominates, or a mixed stand of Douglas fir and other conifers.

"It is difficult to say what the climax type really is," writes Munger.

In the 20 years since Munger's analysis, many of these successional questions remain unanswered for either Oregon, Washington or northern California. Dr. Raymond Dasmann of Humboldt State College, Arcata, California, who has done considerable ecological research in California's redwood belt, wrote me recently that "studies on the coastal forest are only in preliminary stages" and that the literature is scanty from the viewpoint of the ecologist.

His tentative views on climax species in the region agree in general with those of Dr. Paul J. Zinke, assistant professor of forestry at the University of California, Berkeley, who has spent much time afield making a soil and vegetation survey of the northern Coast Range.

Dr. Zinke describes redwood as the dominant tree and climax species on alluvial bottomlands of silt loam soil in the northern California rain forests. On upland soils of southern slopes in the same region, the climax forest type is usually Douglas fir with tanoak and madrono. On northern slopes, or in areas which receive more than 50 inches of annual rainfall, the climax becomes a mixed

\* Munger, Thornton T. 1940. "Cycle from Douglas Fir to Hemlock." *Ecology*, 21:451-459.

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redwood, Douglas fir, tanoak forest. With greater rainfall, redwood alone becomes the climax on these slopes.

Dr. Zinke makes very clear his view that "generally each soil type and situation will have its own climax forest type, and that within such a broad area as the redwood belt many of the generalities about entire regional climaxes are misleading."

With all the unknowns that exist in the ecology of Pacific coastal forests, it becomes ever more apparent how useful a role an undisturbed forest acreage such as the Northern California Coast Range Preserve can play. Here long-range studies can be scientifically conducted to find out what does happen, and perhaps why, in the succession of at least one rain forest.

Perhaps the answer can be found to another puzzle: In what ways does the coastal Douglas fir of northern California differ from the Douglas fir of the Pacific Northwest? Is it less frost resistant, as Galoux suggested? Does it have different associated plants? We wouldn't know at present, according to Dr. Jack Major, ecologist at the University of California at Davis, since plant associations of the Douglas fir region have not been adequately described. This is a world full of red-hot challenges for thoughtful naturalists, whether university graduate students or seasoned ecologists.

No forest is any safer than its watershed. If logging or fires high on the brushy slopes above virgin timber start the deadly gullies of erosion and the downhill slush of brown silt, the soft deep humus of the forest is doomed. The sparkle of the creeks will soon dull to a murky chocolate.

The Coast Range Preserve is unique in containing within its boundaries the entire undisturbed watershed of crystal-clear Elder Creek, into whose boulder-strewn current the densest Douglas fir forest drains. On the Elder Creek slopes lie a variety of upland habitats typical of the region—"balds" where scattered oaks and Douglas firs lend spotted shade to a primarily open grassy area, elfin forests of chaparral where manzanitas twist years of growth into weathered five-foot

trunks, hardwood groves of aromatic bay and cinnamon madrone.

The creeks themselves offer the shade of Oregon ash and big-leaved maple above a musical murmur on the hottest summer day. And there are always the sunny meadows where deer browse beneath mountainsides of dark Douglas fir and silvery chaparral.

To purchase and preserve this versatile area, the Nature Conservancy must raise \$125,000. The property, worth \$1,000,000, is being turned over to the Nature Conservancy at far less than its true value because its owners, Mr. and Mrs. Heath Angelo of Branscomb, wish to see it permanently preserved.

How will it be preserved? The central Elder Creek section with its watershed and dense rain forest will

be designated a sanctuary—to be left completely natural except as necessary for maintenance and protection. Visitors will be limited to foot trails. Scientific studies will follow policies of non-removal and full protection. On the periphery of the inviolate sanctuary, buffer areas will be developed for various natural history uses, following highest conservation principles.

A nature education center for training teachers, Boy Scout and Girl Scout trail leaders, and other youth group personnel has been suggested. State colleges and universities have indicated a desire to carry on ecological research in the area. Possibilities for useful activities are endless.

The Nature Conservancy's reason for existence is one with the desire

*Turn to next page*

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\* Galoux, A. 1956. Le Sapin de Douglas et la Phytogéographie (Station de Recherches de Groenendaal Travaux, Serie B, no. 20). Reviewed in *Ecology*, 1958: 39:181-2.

of countless Americans—to save for ourselves and our successors samples of as many native United States landscape types as we can—to enjoy them and not destroy them. As the last of its kind in California's fast vanishing northern Coast Range wilderness, the Coast Range Preserve beckons strongly for the support of all who wish to see such a forest exist.

Where else can one donate an acre of rain forest or chaparral to the present and future for \$33? Or an individual redwood tree as a memorial? Perhaps this is as close as many of us may ever come to immortality.

—THE END

For additional information, write Western Regional Office, The Nature Conservancy, 1711 Grove Street, Berkeley 9, California.

#### LET'S VISIT THE RUFFED GROUSE

*Continued from page 109*

spoiled forest and stream where nobody thinks about lumbering, burning nor of putting up wire fences without cover to screen the wildlife. Although this type of half-wild land probably harbors most of our nesting grouse, farms on hillsides running back to timber are liked by considerable numbers. Some grouse actually move in on such an estate, taking advantage of the owner's friendship and of the safety brought by it. An example is the place near Kent owned by Robert Nesbett, distinguished member of the National Academy of Design.

The artist once showed me a grouse brooding her eggs at the base

of a haystack close to the side door of his studio. She sat so tight that only by peering closely could we spot her eyes cocked warily at us. She had become so used to the Nesbetts that she never flushed when they passed the nest, although she hurtled out in a panic when a stranger arrived.

This sensible creature had scraped nesting hollows at intervals of two or three feet under the hem of the stack. She had already nested there three years when I saw her, and I hope that she has continued to do so ever since. The owners consider her a pet and are very proud of her. She is a veritable hen of the woods, being probably a wanderer from Bull Mountain, a great rounded dome of

*Continued on page 126*

#### CONSERVATION OUTLOOK—Continued from page 107

romous fishes. Rep. John D. Dingell, Michigan, reintroduced his bill, H.R. 1764, to require approval by the Secretary of the Interior before the Federal Power Commission could issue a license for a dam that would do serious damage to fish and wildlife. The Church bill went to the Senate Committee on Interstate and Foreign Commerce; the Dingell bill to the similar committee in the House.

The endangered polar bear and walrus would be given long-needed protection against uncontrolled hunting on arctic seas and ice outside of Alaska jurisdiction under H.R. 777, a bill by Rep. John P. Saylor, Pennsylvania. The House Committee on Merchant Marine and Fisheries has the Saylor bill.

Several early bills would amend the Federal Water Pollution Control Act, but experienced observers were waiting to see what kind of legislation will emerge from the House Rivers and Harbors Subcommittee which is headed by Rep. John A. Blatnik of Minnesota. Rep. Blatnik is the recognized congressional leader in water pollution matters and, as chairman of the subcommittee handling such legislation, is in position to get action.

Revisions of the pesticides coordination bill considered last year were being studied for later introduction by conservation leaders in the House.

#### YELLOWSTONE BOATING RULES

Regulations to curb the use of motorboats in Yellowstone Lake and certain other waters of Yellowstone National Park have been put in

effect by the Park Service. Only hand-propelled craft will be permitted on Shoshone Lake, the Lewis River channel, and in the Southeast, South, and Flat Mountain arms of Yellowstone Lake.

Motorboats will be permitted on the remainder, about 80 per cent, of Yellowstone Lake, but additional regulations will be enforced there to assure safety and the prevention of pollution.

#### SELWAY-BITTERROOT WILDERNESS

The U.S. Forest Service has announced a plan to reclassify the Selway-Bitterroot Primitive Area in the Bitterroot Mountains of Montana and Idaho. In so doing it would eliminate more than a half-million acres, reducing the protected wilderness by 27 per cent. What is worse, it would drive a wide corridor for road building and timber-cutting between the northern and southern parts of the area. The National Audubon Society will join the Wilderness Society in protesting that the proposed reductions are excessive and will destroy the extensive "remoteness" that now gives the area unusual recreational and scientific values.

For specific information about the proposed changes, write to the Regional Forester, Federal Building, Missoula, Montana. Public hearings were scheduled by the Forest Service at Missoula, March 7 and Lewiston, Idaho, March 9. Written comments may be sent to the Regional Forester at Missoula until March 27, 1961, with a request they be included in the official hearing record.

—The End



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To the personal experiences of some 330,000 miles of travel, the Milnes have added a wealth of interesting details culled from a vast scientific literature. Rescued from obscurity in a professional journal, for example, is the intriguing ecological reinterpretation of the chapters of "Genesis" by Dr. Yaaqov Orev, to whom this insight was revealed when he had the opportunity of comparing the wasted coastal prairie of Texas with the land of Israel.

The oft-told story of the mongoose in the Caribbean emerges fresh, with up-to-the-minute additions. Crocodiles, deer, wolves, rabbits, tree farms, insecti-

Mr. Clement is a member of the Society's headquarters staff.

cides, pollution, all these and many other themes are skillfully interwoven in this account. You will be surprised to learn, I am sure, that your winter feeding of birds has already had dire effects on the people and the landscapes of South Africa; that the sentimental objection to the trapping of fur-bearers or the killing of wild horses which so many of us feel, is endangering the survival of whales in the oceans of the world.

I suggest only two minor demurrers. The attempted control of herring gull numbers (p. 210) by spraying their eggs has failed; and even the medical profession (p. 251) succumbed to temptation in neglecting aseptic precautions in the first flush of enthusiasm over antibiotics. On the other hand, it takes courage in an age dedicated to maximizing profits, to state unequivocally that deer carcasses left in the woods are not wasted. I did miss the documentary notes to Chapter 4 which were inadvertently omitted in printing.

The Milnes are good biologists and they are obviously in earnest when they remind us, in a final paragraph, that every living thing affects man's evolutionary progress. Thoreau, whom they often quote effectively, once scoffed at people who believed they "could kill time without injuring eternity." How can we convince enough of these same people that "by obliterating other kinds of life, man may be destroying himself as well"?

Books continued on page 124

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By William Chapman White, *The Adirondack Museum, Blue Mountain Lake, New York, 1960. 5 1/2 x 8 in., 101 pp. Illustrated. Paperbound, \$3.50.*

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This book is an "out and out" confession of a love affair of a man for a region. The region, of course, is the Adirondack Mountains.

Mr. White was not a native of the Adirondacks. He was born and raised in Pennsylvania, attended Princeton University, and did post graduate work at the University of Pennsylvania. He also studied in Moscow and was a foreign correspondent and a Hollywood script writer. Also, he served with the Office of War Information during World War II.

Settling in Saranac Lake, Mr. White fell in love with the surrounding countryside, and his columns which appeared in the *New York Times* and the *New York Herald Tribune* attest to this. This book is comprised of 47 of these columns. Each column is devoted to a different facet of life in the Adirondacks be it bird, mammal, plant or human.

Mr. White is a master of descriptive phrasing. This, coupled with his appreciation of our God-given outdoors, his keen insight, warmth, and understanding, make this book most enjoyable.

Leonard Lee Rue, III, is a Camp Ranger for Pahaquarra Scout Camp at Columbia, New Jersey. He is also a photographer, writer and lecturer.

## SIX GREAT NATURALISTS

By R. S. R. Fitter, *Hamish Hamilton Ltd., London, England, 1959. 7 1/2 x 5 in., 176 pp. Illustrated. 12s. 6d.*

By **Helen G. Cruickshank**

The author of this small book which contains brief but interesting biographies of six of the world's great naturalists believes enthusiasm, drive, and an overwhelming desire for truth are characteristics shared by genuine naturalists whether they are truly great, sound professionals, or good amateurs.

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Mrs. Cruickshank is author of "Bird Islands Down East," "Flight Into Sunshine," "Wonders of the Bird World," and other books. She is Bird Chairman, Federated Garden Clubs of Florida, and is a member of the Society of Woman Geographers.

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derstanding of nature. It is astonishing to consider that Gilbert White, born in 1720, entered a world in which so much ignorance and superstition about nature was rife and how recently some order has replaced that lack of knowledge.

Each of the six men had a different approach to nature and all had vastly different personalities but all, with the exception of Huxley, were passionately interested in nature from earliest childhood. Each was a careful, accurate observer. Each made experiments to prove or disprove his theories. Each was happiest when out of doors watching, listening and endeavoring to discover the facts about the lives of the creatures observed.

Especially important was the healthy skepticism with which they regarded established ideas which had not yet been proved by experiment. Above all, the actual living plant or animal in its native habitat had the foremost position in the studies of these naturalists. A short list of references at the end of each biography suggests further reading.

As is often true of good books of this type, the reader is challenged by the author's selection and finds himself marshaling arguments in favor of this or that naturalist whose biography was not included. But so great was the contribution of each man included that readers will find it extremely difficult to depose any one of them in favor of another great naturalist.

#### CREATURES OF THE NIGHT

By Dorothy Sterling, Doubleday and Company, New York, 1960. 6 x 9 in., 125 pp. Illustrated. Indexed. Bibliography. \$2.95.

By Dorothy A. Treat

All those who have read Dorothy Sterling's "Insects and the Homes They Build" will be glad to know there is now another such book, this time about insects most active at night. An abundance of good drawings illustrate it.

Winifred Lubell, the artist, together with the author, spent many a night meeting face to face the insects depicted here in the dooryard of a summer cottage in Massachusetts. But as everyone knows, insects are widespread and there are many of each kind. Some, or all of the insects appearing in the pictures and text are certain to be found within a few feet of your own house.

Getting acquainted with insects of the night turns out to be a very easy matter. As soon as the lights go on in your house, you will find them in

Dorothy A. Treat is Educational Director at Aullwood Audubon Center, 1000 Aullwood Road, Dayton 14, Ohio.

quantity and great variety, looking in the windows. But the author describes how to set up an old sheet and a special little light outdoors and have the insects come and sit beside you all over the sheet.

The book also gives a recipe for mixing a simulated "nectar" with a penetrating perfume which has strong appeal. By painting this enticingly fragrant mixture on the bark of trees or over wooden posts, many insects, especially moths, will be attracted and can be examined by flashlight after dark. It is easy to bait traps for the strikingly colored carrion beetles that "bury" the carcasses they find in order to store food for their children.

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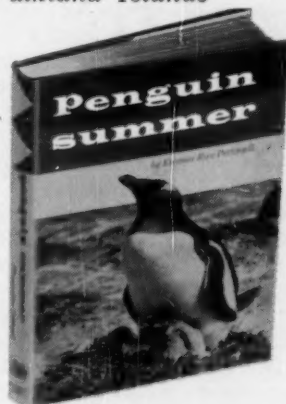
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On this windswept archipelago the Pettingills watched the penguins waddling up steep paths to nest high above the sea, brooding and feeding their chicks, romping in the waters, quarreling and loafing. On cliff and beach they observed the Islands' gulls, albatrosses and birds of prey. In the settlements they lived with the farmers, sailors, and other Island inhabitants.

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## LET'S VISIT THE RUFFED GROUSE

*Continued from page 120*

granite heavily wooded in conifers behind the Nesbitt estate. Grouse are fairly abundant on that hill.

Discovery of a grouse nest may also give a glimpse of the bird's family life. In the weeds beside a brook near Scotch Plains, New Jersey, I once flushed a large hen grouse. She stormed out as if bound for Florida, but soon pitched and started rolling over and over, pretending to drag a broken wing in the undergrowth, and scuffling vigorously. While she was trying to lead me away the male grouse joined her and likewise rolled and scuffed, but notably farther away. The female of a species is always the real heroine of the wild.

Incidentally, although I have surprised perhaps a dozen grouse families, this was the only one with which

I ever saw a male bird. The chicks, smaller than young bantams, but similarly mottled, fluttered a few feet and hid. Their wing-quills had not sprouted but they could already reach cover. They squirmed into the roots of the grass, or turned up dead leaves over themselves and froze. Once hidden they remained so still that in half an hour I could find only one, an infinitesimal chicken of the wood, with wise, limpid eyes staring unafraid into mine. I waited a while longer to learn when the mother bird would gather her brood again, but she did not seem in a hurry about it, and so I never did see that family reassembled.

Once in a while an enterprising grouse takes over an old crow's nest, and lays her eggs in the deeply hollowed, moss-lined interior—a comfortable retreat but one involving

great risk to the chicks. These little fellows are remarkably precocious and must be difficult to restrain from tumbling over the rim and fluttering to the forest floor. Possibly the mother bird carries them as woodcock have been known to do.

The ruffed grouse remains a mystery and a delight the year 'round. Those who try to match its cunning in the golden woods of Indian summer find it the craftiest of gamebirds and those grouse which happily survive the gunning season remain the most interesting denizens of the winter woods. Their feathers grow incredibly thick and warm, while their feet develop pectinations—comb-like processes on their toes resembling miniature snowshoes—with which they skip across drifts without difficulty.

In the coldest spells ruffed grouse sometimes plunge into the deep and drifted snow and dream the night away in caverns warmed by their own bodies and breath. This is dangerous because crust, formed by rain and sudden frosts, occasionally imprisons them. Once in a while, too, a prowling fox digs one out, but more frequently the bird escapes its pounce, hurling back a cloud of powdered snow into the pursuer's gaping mouth. In blizzards I have also known grouse to snuggle under the tips of hemlock branches and allow the snow to engulf them. There, covered by the protective blanket they passed the night in safety.

—THE END

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# Our CHILDREN

By Shirley Miller



Bluebird photographed by Allan D. Cruickshank.

ALTHOUGH exploding populations are generally viewed with some alarm, the residents of Brown County, Wisconsin are making a concerted effort to explode one population in their area this spring on a large scale—their bluebird population.\* Fifty-five 4-H Clubs in the county are considering Bluebird Trails among their 1961 projects.

All of us have watched with growing apprehension the year-by-year decrease of nesting bluebirds, and some even predict that this beautiful and useful bird is going the way of the dodo. Some of us just watch but the Green Bay Bird Club (Wisconsin) does something about it!

Last June, the monthly *Bulletin* of this club ran an item about its proposed "Bluebird Trail," stating "It is time now to start planning for this project, one of the longed-for objectives of our club."

In September, a letter from Mrs. Paul Romig, wife of the club's president, advised, "At our meeting last night a committee was appointed for the Blue-

\* See "When the Bluebirds Came Back to Bergen County," by Robert Ellarson on page 86.

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bird Trail work. Beforehand, on several evenings, Paul and I had roamed the countryside, looking for fences that were at right angles to the main highway fences, for it will do no good to put the houses near the highway. However, they must be in fairly open country."

Next, the club's *Bulletin* published a supplement headed "Bluebird Trails," which read: "The diminishing population of bluebirds is alarming. Lack of proper housing is suspected as a major cause. However, the increasing use of harmful sprays may also prove a major factor. The Green Bay Bird Club hopes to contribute further knowledge on this important subject by observations on weed and insect spraying in the area."


Speaking of the 55 4-H Clubs, the *Bulletin* continued: "Mr. Jerry Apps, County 4-H Club Leader, presented the program at the leaders' planning meeting held in Green Bay on November 1. Green Bay Bird Club representatives will inspect all Bluebird Trails next summer and provide awards for the best trails. The goal for this year is 400 houses on the 4-H Club Trails. This club will have its own Bluebird Trail, in addition to the major Bluebird Trail project of the 4-H Clubs."

Soon after this, we received a seven-page project pamphlet prepared by the Green Bay Bird Club for the Brown County 4-H Clubs participating in the Bluebird Trail project. It contained detailed plans for constructing the houses, practical advice on where to erect them and suggestions for their care.

In a letter accompanying this project pamphlet, Mrs. Romig told of contacting people throughout the country who had had experience in like projects, and the January 1961 issue of the club's *Bulletin* included this heartening word, "From the frosty North to the radiant South, from the West Coast to the East Coast, come suggestions, actual experiences, observations and questions concerning our Bluebird Trails project. In our own state the project is reaching far and wide, with requests coming from interested people for our project pamphlets."

"Robert Ellarson, wildlife specialist of the University of Wisconsin, has given as much help. William Duncan (famous for his work in bluebird preservation) of Louisville, Kentucky, has sent many encouraging suggestions. . . . Bluebird Trail leaders are looking forward to the future with visions of many similar projects developing throughout the state, and are hoping that Bluebird Trails will lead to a broader interest in conservation."

—THE END



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